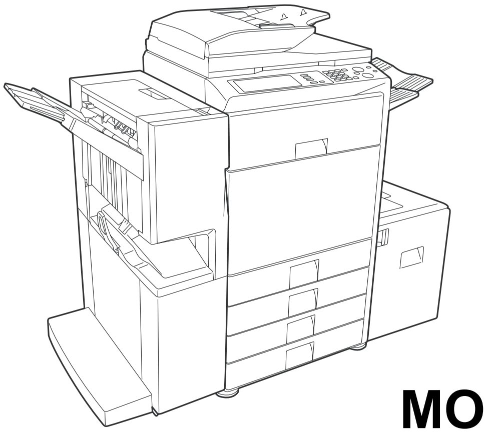
SHARP SERVICE MANUAL

CODE: 00ZMX2700/S1E



DIGITAL FULL COLOR MULTIFUNCTIONAL SYSTEM

MODEL MX-2300/2700 G MX-2300/2700 N

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Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

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NOTE FOR SERVICING

This Service Manual uses some symbols to assure safe operation.

This Service Manual uses some symbols to assure safe operation. Please understand the meanings of photographs before servicing.

⚠ WARNING:	If this WARNING should be ignored, a serious danger to life or a serious injury could result.
⚠ CAUTION:	If this CAUTION should be ignored, an injury or a damage to properties could result.

1. Precautions for servicing

1) When servicing, disconnect the power plug, the printer cable, the network cable, and the telephone line from the machine, except when performing the communication test, etc.

   It may cause an injury or an electric shock.
2) There is a high temperature area inside the machine. Use an extreme care when servicing.

   It may cause a burn.
3) There is a high voltage section inside the machine which may cause an electric shock. Be careful when servicing.
4) Do not disassemble the laser unit. Do not insert a reflective material such as a screwdriver in the laser beam path.

   It may damage eyes by reflection of laser beams.
5) When servicing with the machine operating, be careful not to squeeze you hands by the chain, the belt, the gear, and other driving sections.
6) Do not leave the machine with the cabinet disassembled.

   Do not allow any person other than a serviceman to touch inside the machine. It may cause an electric shock, a burn, or an injury.
7) When servicing, do not breathe toner, developer, and ink excessively. Do not get them in the eyes.

   If toner, developer, or ink enters you eyes, wash it away with water immediately, and consult a doctor if necessary.
8) The machine has got sharp edges inside. Be careful not to damage fingers when servicing.
9) Do not throw toner or a toner cartridge in a fire. Otherwise, toner may pop and burn you.
10) When replacing the lithium battery of the PWB, use a specified one only.

    If a battery of different specification is used, it may be broken, causing breakdown or malfunction of the machine.
11) When carrying a unit with PWB or electronic parts installed to it, be sure to put it in an anti-static-electricity bag.

    It may cause a breakdown or malfunctions.

2. Warning for servicing

1) Be sure to connect the power cord only to a power outlet that meets the specified voltage and current requirements.

   Avoid complex wiring, which may lead to a fire or an electric shock.

   It may cause a fire or an electric shock.
2) If there is any abnormality such as a smoke or an abnormal smell, interrupt the job and disconnect the power plug.

   It may cause a fire or an electric shock.
3) Be sure to connect the grounding wire. If an electric leakage occurs without grounding, a fire or an electric shock may result.

   To protect the machine and the power unit from lightening, grounding must be made.
4) When connecting the grounding wire, never connect it to the following points.

   It may cause an explosion, a fire or an electric shock.

   - Gas tube
   - Lightning conductor
   - A water pipe or a water faucet, which is not recognized as a grounding object by the authorities.
   - Grounding wire for telephone line
5) Do not damage, break, or work the power cord.

   Do not put heavy objects on the power cable. Do not bend it forcibly or do not pull it extremely.

   It may cause a fire or an electric shock.
6) Keep the power cable away from a heat source.

   Do not insert the power plug with dust on it into a power outlet.

   It may cause a fire or an electric shock.
7) Do not put a receptacle with water in it or a metal piece which may drop inside the machine.

   It may cause a fire or an electric shock.
8) With wet or oily hands, do not touch the power plug, do not insert the telephone line jack, do not operate the machine, or do not perform servicing.

   It may cause an electric shock.

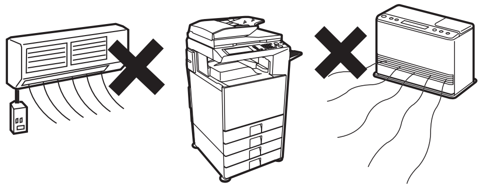
3. Note for installing site

Do not install the machine at the following sites.

1) **Place of high temperature, high humidity, low temperature, low humidity, place under an extreme change in temperature and humidity.**

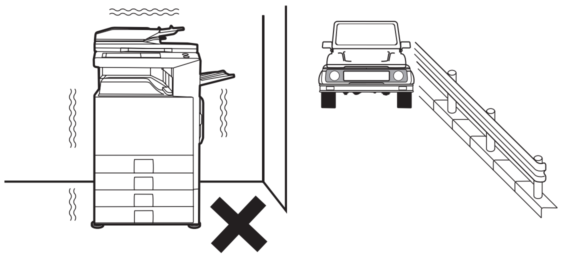
   Paper may get damp and form dews inside the machine, causing paper jam or copy dirt.

   For operating and storing conditions, refer to the specifications described later.



2) **Place of much vibrations**

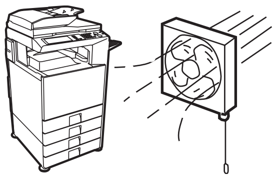
   It may cause a breakdown.



3) **Poorly ventilated place**

   An electro-static type copier will produce ozone inside it.

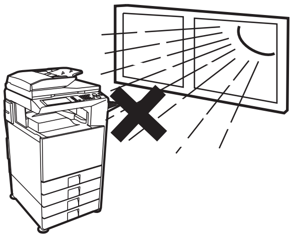
   The quantity of ozone produced is designed to a low level so as not to affect human bodies. However, continuous use of such a machine may produce a smell of ozone. Install the machine in a well ventilated place, and ventilate occasionally.



4) **Place of direct sunlight.**

Plastic parts and ink may be deformed, discolored, or may undergo qualitative change.

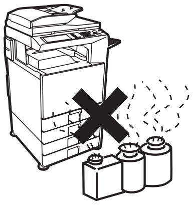
It may cause a breakdown or copy dirt.



5) **Place which is full of organic gases such as ammonium**

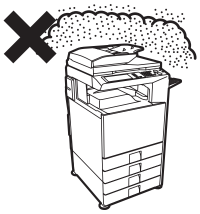
The organic photoconductor (OPC) drum used in the machine may undergo qualitative change due to organic gases such as ammonium.

Installation of this machine near a diazo-type copier may result in dirt copy.



6) **Place of much dust**

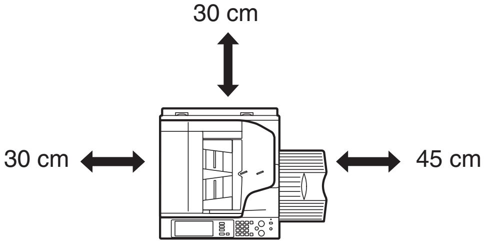
When dusts enter the machine, it may cause a breakdown or copy dirt.



7) **Place near a wall**

Some machine require intake and exhaust of air.

If intake and exhaust of air are not properly performed, copy dirt or a breakdown may be resulted.



8) **Unstable or slant surface**

If the machine drops or fall down, it may cause an injury or a breakdown.

If there are optional paper desk and the copier desk specified, it is recommendable to use them.

When using the optional desk, be sure to fix the adjuster and lock the casters.

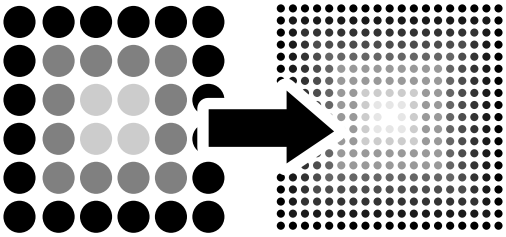
[1] PRODUCT OUTLINE

1. Product features

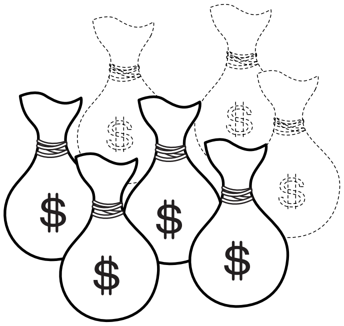
A. Features

(1) Features

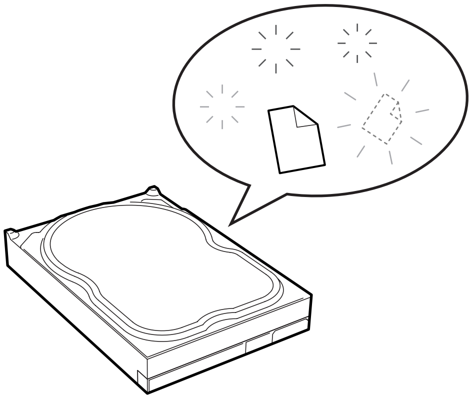
1) The employment of newly developed toner reduces the toner consumption remarkably, realizing high fidelity pictures of human skin, half tone, and hair. In addition, the employment of "Auto Color" function, Sharp's unique auto recognition function, reproduces documents of difficult reproduction.



2) The power consumption for FAX standby with the power OFF is 1W or less, reducing energy expenses of nighttime and load to the environment.



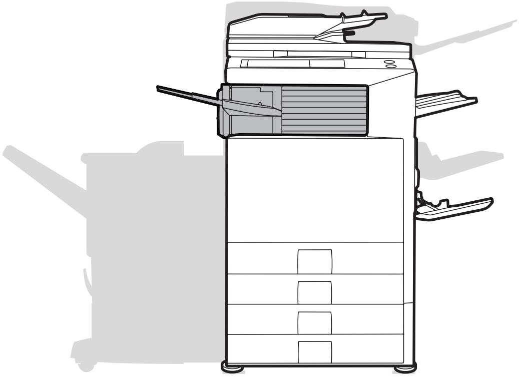
3) Extension of the lifetime of the OPC drums together with the frequency of maintenance realizes resource saving.
4) The unique security system inhibits unauthorized use of the machine, preventing against leak of information.
   - The electronic data are encrypted and saved in the hard disk. When copying or printing or when sending FAX or scanning, data are automatically erased to protect against leak of important information.



   - The user authentication system by a login name, a password, and an e-mail address is employed to prevent against unauthorized use of a third party and to limit the use quantity and usable functions for each user group. In addition, the user authentication by the optional IC card read/writer may be used.

5) The open systems architecture (Sharp OSA) is supported which provides application development environment according to user's needs.
6) Compact area for installation even to a space for a monochrome machine

   The machine can be installed to a space for a monochrome machine, the smallest space in the class of 620mm (W) x 670mm (D), helping backup of color documentations in an office. The installation of the optional finisher (MX-FNX1) which is stored in the center paper exit section of the machine allows stapling and finishing such as punch holes automatically, improving the work efficiency.



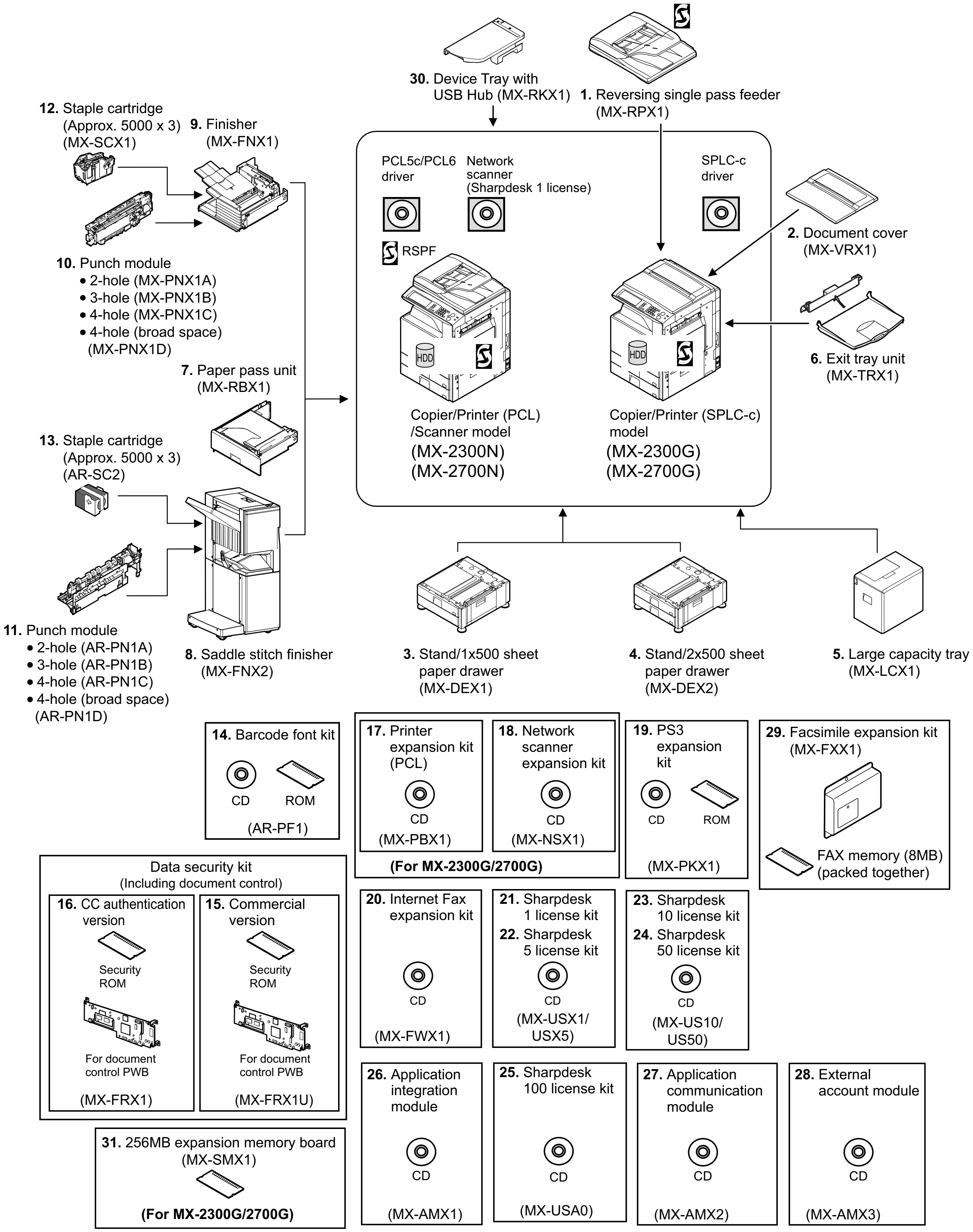
(2) Environmental features

- Energy saving design by pre-heat mode/auto power shut-off mode.
- Conforms to the International EnergyStar program.
- Conforms to the standards of Law on Promoting Green Purchasing.
- Conforms to the Europe RoHS regulations.

(The contents of lead, mercury, hexavalent chromium, cadmium, PBB [polybrominated biphenyl], PBDE [polybrominated diphenyl ether] are limited to the regulated level or less.)

2. Configuration

A. Lineup (Main unit and option)


30. Device Tray with USB Hub (MX-RKX1)
1. Reversing single pass feeder (MX-RPX1)
12. Staple cartridge (Approx. 5000 x 3) (MX-SCX1)
9. Finisher (MX-FNX1)
10. Punch module
• 2-hole (MX-PNX1A)
• 3-hole (MX-PNX1B)
• 4-hole (MX-PNX1C)
• 4-hole (broad space) (MX-PNX1D)
7. Paper pass unit (MX-RBX1)
13. Staple cartridge (Approx. 5000 x 3) (AR-SC2)
11. Punch module
• 2-hole (AR-PN1A)
• 3-hole (AR-PN1B)
• 4-hole (AR-PN1C)
• 4-hole (broad space) (AR-PN1D)
8. Saddle stitch finisher (MX-FNX2)
PCL5c/PCL6 driver
Network scanner (Sharpdesk 1 license)
SPLC-c driver
RSPF
HDD
HDD
Copier/Printer (PCL) /Scanner model
(MX-2300N)
(MX-2700N)
Copier/Printer (SPLC-c) model
(MX-2300G)
(MX-2700G)
2. Document cover (MX-VRX1)
6. Exit tray unit (MX-TRX1)
3. Stand/1x500 sheet paper drawer (MX-DEX1)
4. Stand/2x500 sheet paper drawer (MX-DEX2)
5. Large capacity tray (MX-LCX1)
14. Barcode font kit
CD
ROM
(AR-PF1)
17. Printer expansion kit (PCL)
CD
(MX-PBX1)
18. Network scanner expansion kit
CD
(MX-NSX1)
(For MX-2300G/2700G)
19. PS3 expansion kit
CD
ROM
(MX-PKX1)
29. Facsimile expansion kit (MX-FXX1)
FAX memory (8MB) (packed together)
Data security kit (Including document control)
16. CC authentication version
Security ROM
For document control PWB
(MX-FRX1)
15. Commercial version
Security ROM
For document control PWB
(MX-FRX1U)
20. Internet Fax expansion kit
CD
(MX-FWX1)
21. Sharpdesk 1 license kit
22. Sharpdesk 5 license kit
CD
(MX-USX1/ USX5)
23. Sharpdesk 10 license kit
24. Sharpdesk 50 license kit
CD
(MX-US10/ US50)
31. 256MB expansion memory board (MX-SMX1)
(For MX-2300G/2700G)
26. Application integration module
CD
(MX-AMX1)
25. Sharpdesk 100 license kit
CD
(MX-USA0)
27. Application communication module
CD
(MX-AMX2)
28. External account module
CD
(MX-AMX3)

B. Machine configuration

	MX-2300G	MX-2300N	MX-2700G	MX-2700N
Copier memory (Local memory) (MB)	768			
Printer memory (System memory) (MB)	384	640	384	640
Copier	STD		STD	
GDI printer	STD	–	STD	–
PCL printer	OP*3	STD	OP*3	STD
PS printer	OP*1			
EFI printer	–			
Main body LCD	MONOCHROME HVGA 8.1"			
FAX	OP*4			
Scanner	OP *3	–	OP *3	STD
Filing	STD			
HDD	STD			
RSPF	OP	STD	OP	STD
OC	OP	–	OP	–
Automatic duplex	STD			
Security	OP*2			
Internet Fax	OP*3			

STD: Standard provision, OP: Option

OP*1: Product key target. When PS is used, PCL function must be available. OP*2: Product key target.

OP*3: Product key target. To use this function, the printer memory (system memory) must be expanded to 640MB.

STD*4: No support for some areas.

C. Combination of options list

Section	Name	Model name	MX-2300G MX-2700G	MX-2300N MX-2700N	Remarks
Automatic document feeder	**1.** Reversing single pass feeder	MX-RPX1	OPT	STD	
OC	**2.** Document cover	MX-VRX1	OPT	N/A	
Paper feed system	**3.** Stand/1x500 sheet paper drawer	MX-DEX1	OPT	OPT	
	4. Stand/2x500 sheet paper drawer	MX-DEX2	OPT	OPT	
	5. Large capacity tray	MX-LCX1	OPT	OPT	(A4)
Paper exit system	**6.** Exit tray unit	MX-TRX1	OPT	OPT	
	7. Paper pass unit	MX-RBX1	OPT	OPT	
	8. Saddle stitch finisher	MX-FNX2	OPT	OPT	
	9. Finisher	MX-FNX1	OPT	OPT	(Inner finisher)
	10. Punch module (For inner finisher)	MX-PNX1 A/B/C/D	OPT	OPT	
	11. Punch module (For saddle stitch finisher)	AR-PN1 A/B/C/D	OPT	OPT	(Common in current models)
	12. Staple cartridge (For inner finisher)	MX-SCX1	OPT	OPT	(Approx. 5000 x 3)
	13. Staple cartridge (For saddle stitch finisher)	AR-SC2	OPT	OPT	(Approx. 5000 x 3)
Electrical system (ROM)	**14.** Barcode font kit	AR-PF1	OPT	OPT	(Conventional model)
	15. Data security kit	MX-FRX1U	OPT	OPT	(Commercial version)
	16. Data security kit	MX-FRX1	OPT	OPT	(Authentication version)
Electrical system (Software)	**17.** Printer expansion kit	MX-PBX1	OPT*1	STD	(PCL)
	18. Network scanner expansion kit	MX-NSX1	OPT*1	STD	
	19. PS3 expansion kit	MX-PKX1	OPT*2	OPT	
	20. Internet Fax expansion kit	MX-FWX1	OPT*1	OPT	(Internet Fax)
	21. Sharpdesk 1 license kit	MX-USX1	OPT	OPT	
	22. Sharpdesk 5 license kit	MX-USX5	OPT*3	OPT*3	
	23. Sharpdesk 10 license kit	MX-US10	OPT	OPT	
	24. Sharpdesk 50 license kit	MX-US50	OPT	OPT	
	25. Sharpdesk 100 license kit	MX-USA0	OPT	OPT	
	26. Application integration module	MX-AMX1	OPT*4	OPT*4	
	27. Application communication module	MX-AMX2	OPT	OPT	
	28. External account module	MX-AMX3	OPT	OPT	
Electrical system (FAX)	**29.** Facsimile expansion kit	MX-FXX1	OPT*5	OPT*5	
Electrical system (USB systems)	**30.** Device Tray with USB Hub	MX-RKX1	OPT	OPT	
Electrical system and others	**31.** 256MB expansion memory board	MX-SMX1	OPT	N/A	

STD: Standard provision. OPT: Installable option. Commercially available parts: Use the specified parts, recommended parts, or parts the operations of which have been confirmed. –: Cannot be connected.

*1: Memory expansion is required. (256MB). *2: Printer expansion (PCL) and memory expansion are required.
*3:Installation of the MX-NSX1 or the MX-AMX1 is required. *4: Installation of the MX-NSX1 and expansion of memory (256MB) are required.
*5: No support for some areas.

[2] SPECIFICATIONS

1. Basic specifications

A. Base engine

(1) Type

Type	Desk-top
Color support	Full color

(2) Engine speed

a. Tray1 – 4 (Main unit), LCC

Paper size	MX-2700G/N		MX-2300G/N	
	B/W	Color	B/W	Color
A3, 11 x 17, 8K	14	14	12	12
B4, 8.5 x 14, 8.5 x 13	16	16	14	14
A4, B5, 8.5 x 11, 16K	27	27	23	23
A4R, B5R, A5R, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R, 16KR	19	19	16	16
Extra	13	13	11	11

b. Manual (Main unit)

Paper size	MX-2700G/N		MX-2300G/N	
	B/W	Color	B/W	Color
A3, 11 x 17, 8K	14	11	12	11
B4, 8.5 x 14, 8.5 x 13	16	12	14	12
A4, 8.5 x 11, 16K	23	21	23	21
B5	23	23	23	23
A4R, 16KR	19	14	16	14
8.5 x 11R	19	15	16	15
B5R, 7.25 x 10.5R	19	16	13	13
A5R, 5.5 x 8.5R	19	19	19	19
12 x 18	13	11	11	11
OHP(A4, 8.5 x 11)	11	10	11	10
OHP(A4R, 8.5 x 11R)	9	7	9	7
Extra	13	11	11	11
Envelope	13	13	11	11
Heavy paper (B5, A4, A5R, 8.5 x 11, 8.5 x 5.5R, 16K)	11	10	11	10
Heavy paper (Postcard HIGH)*1	11	10	11	10
Heavy paper (Postcard LOW)*1	7	7	7	7
Heavy paper (Other sizes)	7	5	7	5

*1: Switched by the service simulation setting

(3) Engine composition

Photoconductor kind	OPC (Drum diameter: Black; ϕ30mm, Color; ϕ30mm x 3)
Copying method	Electronic photo (Laser)
Developing system	Dry-type dual-component magnetic brush development
Charging system	Charged saw-tooth method
Transfer system	Intermediate transfer belt
Cleaning system	Counter blade
Fusing system	Heat roller
Waste toner disposal	No toner recycling system

(4) Shifter

Type	Shifter			
Paper weight	55 – 209g/m^2 (17 – 56 lbs)			
Paper size	Non offset mode (Normal output)	A3, B4, A4R, B5, B5R, A5R, Postcard, 8K, 16K, 16KR,11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R, Envelope, Extra		
	Offset mode	A3, B4, A4R, B5, B5R, A5R, Postcard, 8K, 16K, 16KR, 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R (Not Envelope, Extra)		
Productivity (A4, 8.5x11)	Non-offset (Normal output)	MX-2300G/N	B/W	23cpm
			Color	23cpm
		MX-2700G/N	B/W	27cpm
			Color	27cpm
	Offset mode	MX-2300G/N	B/W	23cpm
			Color	23cpm
		MX-2700G/N	B/W	27cpm
			Color	27cpm
Offset range	30mm			
Range of error (In using the recommended paper, A4/8.5 x 11)		Horizontal direction	Vertical direction	Between Jobs
	Non-offset	Not drop from the tray.	-	-
	Offset mode	Within 50mm	Within ±10mm	Min.10mm

(5) Engine resolution

Resolution	Writing: 600 x 600dpi 1200 x 600dpi (Monochome printing only.) * Rotation output not allowed at 1200dpi x 600dpi. PS expansion kit needed.
Smoothing function	None
Gradation	Writing: Monochrome: 2 levels (1bit) / Equivalent of 256 steps Color: Each color 2 levels (1bit) / Each color 16 levels (4bits) / Equivalent of 256 steps

(6) Warmup

Warmup time	80 sec or less * The value may be increased if process-control processing is being executed. Same as current model
Pre-heat	Yes

(7) Jam recovery time

With the door open	Approx. 60 sec	Condition: After the door is kept open for 60 seconds, standard setting, the polygon motor halt

(8) Printable area

A3	293 x 413mm	12 x 18 *	279 x 432mm
B4	253 x 357mm	11 x 17	275 x 425mm
A4	206 x 290mm	8.5 x 14	212 x 349mm
B5	178 x 250mm	8.5 x 13	212 x 323mm
A5	144 x 203mm	8.5 x 11	212 x 272mm
7.25 x 10.5	180 x 260mm	5.5 x 8.5	136 x 209mm
Postcard	96 x 141mm	8K	266 x 383mm
		16K	191 x 263mm

* The printable area for 12 x 18 must be as large as the A3/11 x 17 page dimension by PCL / PS driver.

(9) Void area

Void area Image loss	Top: 4 mm or less Bottom: 3 mm or less FR Total: 4 mm or less

(10) Auto Color Selection

	Copy	Print	Scan
Read	The decision -color or monochrome- is decided when the document is scanned. The scanning speed for color is always adopted.	N/A	The decision -color or monochrome- is decided when the document is scanned. The scanning speed for color is always adopted.
Output	For the output of a black-white original, the decision to switch from color mode to black-white mode is made when the drum running distance shortens. First copy (print): If a fixed number of black-white pages are contained in a series, switch from color mode to black-white mode, starting with the first page of the batch. If the original starts with a black-white page, the output will start in the black-white mode. From the second copy (print) on: The condition is completely understood. If there are a fixed number of black-white pages in a series, switch to the black-white mode, starting with the first page in the series.		N/A
Count	Black-white count for the pages recognized as black-white. Color count for the pages recognized as colored. For N-UP, a page will be counted as a color page if there is at least one colored page inserted upon N-UP.		

(11) Power source

	100V type	200V type
Voltage / Current	100 – 127V 12A	220 – 240V 8A
Frequency	50/60Hz	
Power source code	Fixed type (direct)	Inlet type
Power switch	2 switches (Primary switch: in the front cover; Seconday switch: the operation panel)	

(12) Power consumption

	100V type	200V type
Maximum rated power consumption	1.44kW	1.84kW

*1: Heater is OFF when power source ON.

(13) Noise

In action	B/W : 63dB or less Color : 63dB or less
Standby	B/W : 55dB or less

(14) Dimensions

	MX-2300G/MX-2700G	MX-2300N/MX-2700N
Outer dimensions (W x D x H) (with Multi Manual)	620 x 670 x 795mm (24 13/32 x 26 3/8 x 31 inch)	620 x 670 x 950mm (24 13/32 x 26 3/8 x 37 26/64 inch)
Footprint (W x D)	590 x 670mm (23 15/64 x 26 3/8 inch)	590 x 670mm (23 15/64 x 26 3/8 inch)

(15) Weight

	MX-2300G/MX-2700G	MX-2300N/MX-2700N
Main unit	Approx. 102kg (225lbs)	Approx. 112kg (247lbs)
Main unit + Developer + Toner cartridge	Approx. 106kg (234lbs)	Approx. 116kg (256lbs)

(16) Dimensions occupied by Machine (with Multi Manual/Exit tray extended)

MX-2300G/MX-2700G	MX-2300N/MX-2700N
W1050 x D670mm (W41-22/64 x D26-3/8 inch)	

B. Paper feed unit/Transport/Paper exit secton

(1) Machine paper feed tray

Form	Standard: Double feeder tray + multi manual Maximum: Fourfold feeder tray + multi manual + large capacity feeder cassette
Feeding method	Feeding from the upper section with front loading
Heater (Engine part)	Service parts

(2) Paper feed tray 1/tray 2

Feeding method	Feeding from the upper section with front loading
Heater (Engine part)	Service parts
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R
Changing of paper size	Guide adjustment by users and size setting through key input
Paper type setting	Yes
Default paper size setting	(Tray 1) Abroad-AB : A4 Abroad-inches : 8.5 x 11
	(Tray 2) Abroad-AB : A3 Abroad-inches : 11 x 17
Feedable paper type/weight	Plain paper: 60-105g/m^2 (16-28 lbs)
Paper capacity	Standard paper: 500 sheets (80g/m^2, 21lbs)
Paper Type	Plain paper, pre-printed paper (not including backing paper), recycled paper, letter head, pre-punched paper, colored paper * Users can set up all of these paper types.
Paper size detection (Size setting through key input)	A3, B4, A4, A4R, B5, B5R, A5R, 8.5 x 13 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5R, 7.25 x 10.5R, 8K, 16K, 16KR
Detection of Remaining Paper	Level detection (4 levels: 100%, 67%, 33%, and none)

(3) Manual feed tray (Bypass tray)

Paper Size	A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR 12 x 18, 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R Envelope (Monarch / Com-10 / DL / C5 / Rectangle 3 / Western 2 / Western 4) Extra Size (Tab paper is limited to A4; tab width 12mm-20mm / 8.5 x 11; tab width 6.1-17mm)
Changing of paper size	Guide adjustment by users
Paper type setting	Yes
Feedable paper type/weight	Thin paper: 55 – 59g/m^2 (15 – 16 lbs) Plain paper: 60 – 105g/m^2 (16 – 28 lbs) Heavy Paper: 106 – 209g/m^2 (28+ – 56 lbs) Envelope: 75 – 90g/m^2 (20 – 24 lbs) OHP Label paper Tab paper Gloss Paper
Paper capacity	Standard paper: 100 sheets Envelope: 20 sheets OHP: 20 sheets Heavy paper: 40 sheets Tab paper: 20 sheets Gloss paper: 20 sheets Other special paper: 1 sheet
Paper Type	Plain paper, pre-printed paper (Excluding back print paper), recycled paper, letter head, pre-punched paper, colored paper, heavy paper, thin paper, label paper, OHP, tab paper, envelope. * Users can set up all of these paper types.

Paper size detection	Auto Detect Auto-AB	A3, B4, A4, A4R, B5, B5R, A5R, 8.5 x 13, Postcard, 8.5 x 11, 11 x 17
	Auto Detect Auto-Inch	12 x 18, 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5R, 7.25 x 10.5R, A3, B4, A4, B5
	For China	A3, B4, A4, A4R, B5, B5R, A5R, 11 x 17, 8.5 x 14, 8.5 x 11, 8K, 16K
Detection of remaining paper	yes or no only	

(4) Double-sided

Method	Non-Stack
Paper size	A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5R
Paper type	Plain paper, pre-printed paper (not including backing paper), recycled paper, letter head, pre-punched paper, colored paper
Paper weight (for duplex operation)	Plain paper: 60-105g/m^2 (16-28 lbs)
Logo paper support	For paper such as letterhead paper with front-back attributes, the engine control must be cared for printing side.

(5) Paper exit tray (Center tray)

Exit location/ method	Face down in the main unit
Exit capacity	500 sheets (A4 or 8.5 x 11 (color recommended paper))
Exit paper size/ type	All feedable paper except 12x18.
Exit paper detection	No
Exit tray full detection	Yes
Shifting function	Yes
Rotation sort	No

(6) Paper exit tray unit (Right tray)

* Option (MX-TRX1)

Form	Exit tray unit
Transport standard	Center standard
Ejecting location/ method	External ejection from the right face of the main unit / face-down ejection
Tray capacity	100 sheets (A4 or 8.5 x 11 (color recommended paper))
Ejected paper size/ type	Any feedable paper except envelope and tab paper.
Full tray detection	Yes
Shifter	No
Dimensions	W289 x D405 x H52mm (W11-3/8 x D15-61/64 x H2-3/64 inch) With tray extended: W419 x D405 x H52mm (W16-1/2 x D15-61/64 x H2-3/64 inch)
Weight	Approx. 0.93kg (2lbs)
Installation/ maintenance	Installation by service personnel.
Optional detection	Setting by simulation (Sim. 26-1)
Packaged items	Exit tray, full actuator, installation advisory (in 6 languages)

(7) Reversing single pass feeder (MX-2300N/2700N)

Form		RSPF (Reversing single pass feeder)	
Scan speed		Monochrome (A4/8.5 x 11)	Color (A4/8.5 x 11)
	Copy	1-sided: 27 sheets/minute (600 x 300dpi, 1bit) 2-sided: 15 pages/minute (600 x 300dpi, 1bit)	1-sided: 27 sheets/ minute (600 x 600dpi, 4bit) 2-sided: 12 pages/ minute (600 x 600dpi, 4bit)
	Fax	1-sided: 48 sheets/minute (200 x 200dpi, 1bit) 2-sided: 15 pages/minute (200 x 200dpi, 1bit)	N/A
	Scanner	1-sided: 48 sheets/minute (200 x 200dpi, 1bit) 2-sided: 15 pages/minute (200 x 200dpi, 1bit)	1-sided: 35 sheets/ minute (200 x 200dpi, 8bit) (when in full color) 2-sided: 15 pages/ minute (200 x 200dpi, 8bit)
	Internet Fax	1-sided: 48 sheets/minute (200 x 200 dpi, 1bit) 2-sided: 15 pages/minute (200 x 200 dpi, 1bit)	N/A
Document setup direction		Upward standard (1toN feeding standard)	
Document standard location		Center standard (Rear one-side standard for random feeding)	
Document transport method		Sheet-through method	
Document sizes		Inch type-1	11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5, A4, A3
		Inch type-2	11 x 17, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5, A4, A3
		AB type-1	A3, B4, A4, A4R, B5, B5R, A5, 8.5 x 11, 8.5 x 14, 11 x 17
		AB type-2	A3, B4, A4, A4R, B5, B5R, A5, 8.5 x 11, 216 x 330, 11 x 17
		AB type-3	A3, B4, A4, A4R, A5, 8K, 16K, 16KR, 8.5 x 11, 216 x 330, 11 x 17
		Long paper	800mm (Monochrome 2 levels only)
		Mixed feeding (same type / same width) possible Random feeding (feeding of different types / different widths) Only the following combinations of 2 size types are allowed: A3 and B4; B4 and A4R; A4 and B5; B5 and A5; and 11-inch and 8.5-inch. 2-sided scanning is disabled during random feeding. * When mix feeding, random feeding, or manual set of document size, scan speed is 16 pages/ minute (A4, 8.5 x 11)	
Document weights	1-side	Thin paper	35 – 49g/m^2 (9 – 13 lbs) * Thin paper mode is (18 pages/ minute (A4, 8.5 x 11) set up for the thin paper.
		Plain paper	50 – 128g/m^2 (13 – 34 lbs)
	2-side	50 – 105 g/m^2 (13 – 28 lbs)	
Document carrying capacity		Maximum: 100 sheets (80g/m^2, 21lbs), or Maximum: 13 mm, 1/2 inch or less	
Types of document that may not be transported		The following documents are NOT allowed: OHP, second original drawing, tracing paper, carbon paper, thermal paper, wrinkled / broken / torn document, document with cuts and pastes, documents printed by an ink ribbon, and perforated document except 2-punched / 3-punched (Perforated document by punch unit is allowed.)	
Paper detection		Yes	

Paper detection size	Auto detection (Switching one type of detection unit through system setting)	
	Inch-1	11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A4, A3
	Inch-2	11 x 17, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5, A4, A3
	AB-1	A3, B4, A4, A4R, B5, B5R, A5, 8.5 x 11, 8.5 x 14, 11 x 17
	AB-2	A3, B4, A4, A4R, B5, B5R, A5, 8.5 x 11, 216 x 330, 11 x 17
	AB-3	A3, B4, A4, A4R, A5, 8K, 16K, 16KR, 8.5 x 11, 216 x 330, 11 x 17
Paper feeding direction	Right hand feeding	
Document inversion	Yes	
Simultaneous double-sided scanning	Not allowed	
Maintenance parts	Paper feed roller, pick-up roller, separation roller	
Power source	Provided from the main unit	
Power consumption	35.8W	
Dimensions	W590 x D510 x H155 (mm) W23-15/64 x D20-5/64 x H6-7/64 (inch)	
Weight	Approx. 10kg (22.0lbs)	

C. Scanner section

(1) Resolution/Gradation (or Levels)

Scan resolution (dpi)	Copy mode		
		Monochrome	Color
	Original Cover	600 x 600dpi 600 x 300dpi (Default)	600 x 600dpi (Default)
	RSPF	600 x 600dpi 600 x 300dpi (Default)	600 x 600dpi (Default)
Transmission resolution (dpi)	Image process	(Scanner) 100 x 100dpi / 200 x 200dpi / 300 x 300dpi / 400 x 400dpi / 600 x 600dpi (Internet Fax) 200 x 100dpi (Half tone not allowed) / 200 x 200dpi / 200 x 400dpi / 400 x 400dpi / 600 x 600dpi (FAX) Standard (203.2 x 97.8dpi) (Half tone not allowed) / Fine (203.2 x 195.6 dpi) / Super fine (203.2 x 391dpi) / Ultra fine (406.4 x 391 dpi)	
	PC-FAX/ PC-Internet Fax	200 x 100dpi / 200 x 200dpi / 200 x 400dpi / 400 x 400dpi	
	Network TWAIN	75dpi / 100dpi / 150dpi / 200dpi / 300dpi / 400dpi / 600dpi or custom: 50-9600dpi	
Exposure lamp	Xenon		
Scan Levels	10bits		
Output levels	FAX mode: 1bit Internet Fax mode: 1bit Scanner mode: Black & White: 1bit Gray Scale: 8bit Full Color: Each color RGB 8bit		

(2) Original cover

Scan Range	297 x 432mm	
Original Cover Standard Location	Left back as standard	
Detection	Yes	
Detection Size	Auto Detect (One type of detection unit to be switched for software destination)	
	Inch	<INCH-1> 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5 <INCH-2> 11 x 17, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 5.5 x 8.5
	AB	<AB-1> A3, A4, A4R, A5, B4, B5, B5R <AB-2> A3, A4, A4R, A5, B5, B5R, 216 x 330 <AB-3> 8K, A4, A4R, A5, B4, 16K, 16KR
Heater (Scanner part)	Service parts	

D. Fuser section

(1) Type

System	Heat roller attachment system

2. Functional specifications

A. Specifications of copy functions

(1) Copy speed (Continuous copy speed)

a. Tray 1 – 4, LCC

	Model name	MX-2700G/N				MX-2300G/N			
	Color / B/W	Color		B/W		Color		B/W	
	Print / Copy	Print	Copy	Print	Copy	Print	Copy	Print	Copy
Paper size	Magnification	Normal	Reduction (25%) Normal (100%) Enlargement (400%)	Normal	Reduction (25%) Normal (100%) Enlargement (400%)	Normal	Reduction (25%) Normal (100%) Enlargement (400%)	Normal	Reduction (25%) Normal (100%) Enlargement (400%)
A3, 11 x 17, 8K		14	14	14	14	12	12	12	12
B4, 8.5 x 14, 8.5 x 13		16	16	16	16	14	14	14	14
A4, B5, 8.5 x 11, 16K		27	27	27	27	23	23	23	23
A4R, B5R,A5R, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R, 16KR		19	19	19	19	16	16	16	16
Extra		13	13	13	13	11	11	11	11

b. Manual feed

	Model name	MX-2700G/N				MX-2300G/N			
	Color / B/W	Color		B/W		Color		B/W	
	Print / Copy	Print	Copy	Print	Copy	Print	Copy	Print	Copy
Paper size	Magnification	Normal	Reduction (25%) Normal (100%) Enlargement (400%)	Normal	Reduction (25%) Normal (100%) Enlargement (400%)	Normal	Reduction (25%) Normal (100%) Enlargement (400%)	Normal	Reduction (25%) Normal (100%) Enlargement (400%)
A3, 11 x 17, 8K		11	11	14	14	11	11	12	12
B4, 8.5 x 14, 8.5 x 13		12	12	16	16	12	12	14	14
A4, 8.5 x 11, 16K		21	21	23	23	21	21	23	23
B5		23	23	23	23	23	23	23	23
A4R, 16KR		14	14	19	19	14	14	16	16
8.5 x 11R		15	15	19	19	15	15	16	16
B5R, 7.25 x 10.5R		16	16	19	19	13	13	13	13
A5R, 5.5 x 8.5R		19	19	19	19	19	19	19	19
A3W, 12 x 18		11	11	13	13	11	11	11	11
OHP(A4, 8.5 x 11)		10	10	11	11	10	10	11	11
OHP(A4R, 8.5 x 11R)		7	7	9	9	7	7	9	9
Extra		11	11	13	13	11	11	11	11
Envelope		13	13	13	13	11	11	11	11
Heavy paper (B5, A4, A5R, 8.5 x 11, 8.5 x 5.5R, 16K)		10	10	11	11	10	10	11	11
Heavy paper (Postcard HIGH) *1		10	10	11	11	10	10	11	11
Heavy paper (Postcard LOW) *1		7	7	7	7	7	7	7	7
Heavy paper (Other sizes)		5	5	7	7	5	5	7	7

*1: Switched by the service simulation setting

(2) First copy time

Platen/RSPF	B/W	Color
Platen	6.3 sec	8.9 sec
RSPF	11.6 sec	16.9 sec

[Measuring Conditions]

* Polygon in rotation

* Feeding A4/8.5 x 11 (landscape) paper from the main unit tray 1

* No Auto Color Selection and No Auto Color for color

(3) Job speed

a. Document changing speed (in copy mode)

	MX-2700G/N		MX-2300G/N	
	B/W	Color	B/W	Color
S to S	27cpm (100%)	27cpm (100%)	23cpm (100%)	23cpm (100%)

* The copy speed in combination of the main unit and the auto document feed user is defined.

* S to S: A4/8.5 x 11 document, 11 pages and 1 copy (not including the first copy)

Monochrome: 600 x 300dpi and color: 600 x 600dpi (default)

b. BLI standard

Model name / Mode		MX-2700G/N		MX-2300G/N	
		B/W (1bit)	Color (4bit)	B/W (1bit)	Color (4bit)
Copy method	S to S	24cpm (89%)	23cpm (85%)	20cpm (89%)	20cpm (85%)
	S to D	21cpm (78%)	20cpm (74%)	19cpm (83%)	18cpm (78%)
	D to D	21cpm (78%)	19cpm (70%)	19cpm (83%)	17cpm (74%)

* S to S: 10 pages of A4/8.5 x 11 document and 5 copies

* S to D: 10 pages of A4/8.5 x 11 document and 5 copies

* D to D: 10 pages (20 sides) of A4/8.5 x 11 document and 5 copies

c. Bertl standard

Model name / Mode		MX-2700G/N		MX-2300G/N	
		B/W (1bit)	Color (4bit)	B/W (1bit)	Color (4bit)
Copy method	S to S	23cpm (84%)	21cpm (78%)	19cpm (84%)	18cpm (78%)
	S to D	14cpm (52%)	12cpm (44%)	13cpm (57%)	11cpm (48%)
	D to D	20cpm (74%)	19cpm (70%)	18cpm (78%)	17cpm (74%)

* S to S: 5 pages of A4/8.5 x 11 document and 5 copies

* S to D: 10 pages of A4/8.5 x 11 document and 1 copy

* D to D: 5 pages (10 sides) of A4/8.5 x 11 document and 5 copies

(4) Continuous copy

Multi max. number	999 sheets

(5) Resolution

Scan resolution	600 x 600dpi
Writing resolution	600 x 600dpi

(6) Copy document

Document	Max. A3 (11 x 17)
Document type	Sheet/Book original

(7) Copy magnification ratio

Copy magnification ratio	Normal: 1:1±0.8% AB series: 25%, 50%, 70%, 81%, 86%, 100%, 115%, 122%, 141%, 200%, 400% Inch series: 25%, 50%, 64%, 77%, 100%, 121%, 129% , 200%, 400%
Zoom	25 – 400% (25 – 200% for RSPF)
Preset magnification ratio	4
XY zoom	Yes

(8) Density, copy image quality processing

Exposure mode	Automatic (Color: Auto Color, Black-white: Character AE) Text,Text/Printed Photo, Print photo, Text/Photo, Photo, Map, Pale-color document.
Copy document mode	Effective for Text, Text/Printed photo, Printed photo mode.
Color emphasis	Effective for Text, Text/Printed photo, Printed photo, Text/Photo, Photo, Map mode.
Manual steps	9 steps
Toner save mode	Monochrome: Yes Color: Yes Off on printed photo, photo or pale-color document

(9) Color copy mode

Auto Color Selection copy	Copy mode automatically discerning color/ monochrome.
Full color mode	Enforced full color mode
2-color mode	Red-black mode (Change red point in document into other color) Mode to select black and another color from R/G/B/ C/M/Y
Single color mode	Mode to select one color from R/G/B/C/M/Y
Monochrome copy mode	Enforced monochrome copy mode

(10) Color Adjustment

RGB adjustment	Yes
Color balance	Yes
Saturation adjustment	Yes
Brightness adjustment	Yes
Contrast adjustment	No
Sharpness adjustment	Yes
Background removal	Yes
Auto color calibration	Allowed by system setting
Registration adjustment	Allowed by system setting (automatic-manual)

(11) Copy functions

Function	Automatic paper selection	Yes (Mixed/random size feeding supported)
	Automatic magnification selection	Yes
	Paper type select	Yes Type setting allowed
	Auto tray switching	Yes
	Rotated copy	Yes Large rotated copy exceeding A4 supported
	Electronic sort	Yes
	Rotated sort	No Unavailable
	Job reservation	Yes
	Program call/ registration.	Yes (The program name can be registered.)
	Preheat function	Yes Conditions set up by system setting
	Auto power shutoff	Yes Conditions set up by system setting
	User authentication	200
	Process control	Yes
	Tandem copy	Yes
	Mixed document feeder	Yes (Random + MIX)
	Document paper size input	Yes (Determinate/indeterminate size)
	Indeterminate paper size input	Yes
	2-sided copy direction switch	Yes
Special function	Margin shift	Yes
	Edge/center erase	Yes
	Dual page copy	Yes
	Cover/insertion	Yes
	Tab paper insertion	Yes (Insertion only. Tab copy not allowed. Staple/Punch not allowed.)
	OHP insertion	Yes
	Tab copy	Yes
	Centering	Yes
	2in1/4in1	Yes
	Pamphlet	Yes
	Card shot	Yes
	Book copy	Yes
	Large capacity document mode	Yes
	Black-white Inversion	Yes (Only black-white copy allowed/ color copy not allowed upon setup Not ready)
	Multi-Page Enlargement	Yes
	Mirror image	Yes
	Photo repeat	Yes

Special function	Date print	Yes (Colored allowed: Bk, C, M, Y)
	Character	Yes (Colored allowed: Bk, C, M, Y)
	Stamp	Yes (Colored allowed: Bk, C, M, Y)
	Page printing	Yes (Colored allowed: Bk, C, M, Y)
	Shading	No
	Proof copy	Yes
	Document Control	Yes (with Data Security Kit equipped)

B. Image send function

(1) Mode

Scanner	Scan to e-mail Scan to Desktop Scan to FTP Scan to Folder(SMB) Scan to USB memory Scan to e-mail with Meta Scan to Desktop with Meta Scan to FTP with Meta Scan to SMB with Meta
Internet Fax	Internet Fax to e-mail/FTP Full mode supported (including Simple mode)
IP-FAX	No

(2) System environment

	Copier memory (Local memory)	Printer memory (System Memory)	Data saving destination
Scanner	768MB (Standard)	640MB (Expansion required for G model)	HDD (Standard)
Internet Fax	768MB (Standard)	640MB (Expansion required for G model)	HDD (Standard)

(3) Image send function (Push send from the main unit)

a. Support system

Mode	Scanner	Internet Fax
Corresponding server /protocol	SMTP FTP(TCP/IP) SMB	POP server SMTP server ESMTP server

b. Support image

Mode	Scanner	Internet Fax
File format	Monochrome: TIFF, PDF, Encrypted PDF Color: Gray scale, color TIFF, JPEG, PDF, Encrypted PDF	Monochrome TIFF-FX (TIFF-F, TIFF-S)
Compression method	**[Monochrome]** • Non-compression • G3 (1-dimensional) = MH (Modified Huffman) • G4 = MMR (Modified MR) **[Color/Gray scale]** • JPEG (High, middle, low)	MH, MMR
Specified pages per size (number of page(s) specification allowed)	Yes	---

c. Image processing

Mode	Scanner	Internet Fax
Original scanning color	Full color, grayscale, B/W	B/W
Auto color selection	**[When Color start key pressed.]** • Auto (When judged as Color : Full color, When judged as B/W : B/W (2 value)/Gray scale) **[When B/W start key]** • B/W (2 value) • Gray scale	---
Halftone reproduction	Equivalent of 256 steps	
Density adjustment	Auto + 5 steps (The image quaity of "Auto" is the same as that of "Manual = 3" when selecting full color/ grayscale.)	Auto + 5 steps
	Black-white enabled • Auto • Manual Color button enabled When selecting "Auto": • Text/printed photo • Text/photo • Text When selecting "Manual": • Text/printed photo • Text/Photo • Text • Photo • Printed photo • Map	---
Selection of image quality	---	Half tone (Black-white only) ON/OFF
Resolution (depends on file format/transmission method)	100 x 100 dpi	200 x 100dpi (Half tone not allowed)
	200 x 200 dpi	200 x 200dpi
	300 x 300 dpi	200 x 400dpi
	400 x 400 dpi	400 x 400dpi
	600 x 600 dpi	600 x 600dpi
Moire reduction mode	Yes (Color/grayscale)	---
Notes' security feature	Yes (color only)	---

d. Specification of Addresses

Mode	Scanner	Internet Fax
Address specification	Specification by one-touch/group/direct address entry. Entry from soft keyboard. (Scanner/Internet Fax) Entry from 10-key. (Fax) Selection from LDAP server	
Setting of default address *1	Yes	---
Number of One-touch address key registration	Total (number of key): Maximum 999	
Number of Group (1 key) address registtation	Number of Group (1 key) address registration : maximum 500 Number of Group key registration : 5000 (Total address number included in /999 key)	
Program	48	
Direct entry of addresses	Soft keyboard	
Chain dial	---	
Resend	Call up nearest 8 addresses. *4	

Mode	Scanner	Internet Fax
Shortcut for address selection (quick key)	Use the 10-key to call up registered numbers of addresses.	
CC/BCC sending	Yes	---
Subjet	Selective/direct entry from the list	
File name	Selective/direct entry from the list	
Sender name	Selective/direct entry from the list/selection from LDAP server	--- (1 default address fixed as sender name)
Transmission message (message body)	Selective/direct entry from the list. (Number of characters: Maximum of 1800 half-size characters (888 full size characters))	
Preset mail footer *2	Yes	
Disable direct entry transmission *3	Yes	
Disable PC- Fax sending	Yes	
Disable Internet Fax sending	Yes	

*1: The scanner mode allows setting the default address. To transmit data, users only have to set the original and press the start key.

*2: Function to set up a text message that will be added automatically to the message body upon mail transmission. Editing upon transmission is not allowed.

*3: When disabled, the address registration is not allowed either.

*4: Except for FTP, Desktop, SMB, USB memory, Broadcast.

e. Specification of Multiple Addresses

Mode	Scanner	Internet Fax
Broadcast	Yes (500 destinations) (e-mail/FTP/Desktop allowed)	Yes (500 destinations)

* Broadcast transmission by scanner, Internet Fax and Fax is allowed. (Monochrome only)

f. Transmission function

		Scanner	Internet Fax
Memory transmission		94 destinations in all	
Rotated transmission		---	Yes
Scaled transmission		Yes Enlargement/reduction is allowed only from a fixed size to another. Reduction may be done on the receiver side with Fax/Internet Fax sending.	
Recall mode	Error	---	Yes
	Busy	---	---
		---	Number/time to be set up through system setup
Long original transmission		Yes Maximum of 800mm (single side only/black-white 2 values only)	
Change of the number of pages for each file		Yes	---
Job partition through recognition of white paper.		No	---
Restriction on transmission size		Yes	---
Large capacity original mode		Yes	
Scanning of thin paper		Yes	
Mixed originals feeder		Yes (Random + MIX)	
Default date sender transmission		---	Yes (ON only)

g. Reception function

	Scanner	Internet Fax
Automatic reception	---	Yes
Manual reception	---	Yes
Memory reception	---	Yes
Fixed size reduced reception	---	Yes
Specified size scaled reception	---	No
Rotated reception	---	Yes
Setting of received data print condition	---	No
2-sided reception	---	Condition setting through system setting
2-in-1 reception	---	No
Automatic reduction setting upon receiving A3	---	Yes
Automatic reduction setting upon receiving letter	---	Yes
Address/Domain-specified reception allowed	---	Yes (50 domains)
Address/Domain-specified reception not allowed. (To be rejected)	---	Yes (50 domains)
Received data bypass output	---	Yes
Reception confirmation cycle setting	---	Setting by 0-8 hours/ each minute
POP3 communications timeout setting	---	Setting by 30-300/every 30 seconds
Index printing	---	No
Body text print select setting	---	Yes
Transfer function upon disabling of output.	---	Yes (1 receiver (of transfer) registration)
Internet Fax/Fax to e-mail (Transfer of Internet Fax/Fax reception data to e-mail, inbound routing)	---	Yes
Exit tray setting	---	Yes
Insertion of job separator sheet	---	No
Staple function of received data	---	Yes
Auto wake up print *1	---	Yes
Received data print hold *2	---	Yes
Color toner print when black toner runs out.	---	No
Fax response lamp	---	Yes

*1: The auto wake up print for Internet Fax is a pseudo night-time mode with main power source (primary) switch ON and main unit power (secondary) switch OFF. Following the interval of the reception confirmation cycle, it allows reception of the data from a POP server (if there are any) and launch the main unit for output. (It cannot attain the pseudo night-time mode if the main power source (primary) switch is off. In this case, this function is not supported.)

*2: This function saves all received data in memory and starts out put after password entry. (Confidential reception is excluded.) Setting only on the reciver side.

h. Report/list function

	Scanner	Internet Fax
Image sending activity report	Yes Time-specified output Output with memory full * Maximum of 200 times including both transmission and reception	
Transaction report	Yes	
Address/phone number table	Yes	
Group table	Yes	
Program table	Yes	
Communication original contents print	---	Always print/Upon error/no print
List of addresses allowed or not allowed for reception	---	Yes

i. Other Functions

	Scanner	Internet Fax
Time specification	Yes	
Sender print	---	Yes
Page number print	---	Yes
Date print	---	Yes (Date can be expressed alternatively)
Page partition transmission	Yes	
Page connection	No	
Edge erase	Yes	
Center erase	Yes	
2 in 1	No (Allowed for Fax / Internet Fax broadcast)	Yes
Background removal	Yes (Only color and gray scale)	---
Card shot	Yes (Equivalent or enlargement up to the paper width. The maximum enlargement is not allowed to exceed 400%)	
Confirm transmission	---	Yes Timeout time Setting for 1 minute – 240 hours/each minute
Forward data transmission/reception (Document Admin)	Yes Data transmission by PC-Fax/PC-Internet Fax is allowed, too.	

* This function means that e-mail address setteing on F code relay broadcast allowed.

j. Record size

Mode	Scanner	Internet Fax
Maximum record width	---	293mm / 11-17/32
Record size	---	A3 – A5/11 x 17 – 5.5 x 8.5

k. Registration-related settings

Mode	Scanner	Internet Fax
One-touch/group *1 E-mail FTP Desktop SMB Internet Fax	999 destinations Use of LDAP allowed Up to 500 registered addresses for each group dial. Registered name in 18 full-size character (36 half-size characters)	
Default address setup	Yes	---
Desktop registration	Yes Registration by using Web or NST (network scanner tool) *2	---
Program	Registration of addresses (groups), settings (density, image quality) and special functions in one set is allowed. (48 of them)	
Sender registration	200 (user registration from Web) *3	---
Number of sender registration	---	1 (20 characters)
Quick key (short cut registration) *4	Yes (001 – 999)	
Retrieving/scanning of registered data to other model	Yes (By address book conversion utility)	
Import/export of address book	Yes (By storage backup)	

*1: Since scan/Internet Fax/Fax uses the common address book, the number of addresses allowed for registration is the sum total of all modes.

*2: The network scanner expansion kit (MX-NSX1) required (G model).

*3: The book for address selection is used when a scan sender is selected.

*4: Quick key is the function to select an address based on the registered number of each address within the book for address selection. Users should be able to select a quick key number.

l. Sound settings

Mode	Item	Scanner	Internet Fax
Reception sound	Sound volume setting	---	Yes *1
Communication error sound	Sound volume setting	---	Yes *2
Sound setting for end of original reading (image send)	Sound volume setting	Yes *1	

*1: Large/middle/small. Setup by system setting.

*2: Large/middle/small/no sound. Setup by system setting.

m. Others

Mode	Scanner	Internet FAX
PC-Internet Fax	---	Yes
Trial mode	Yes	No

C. PC-Fax functions

(1) PC-Fax/PC-Internet Fax operating environment

OS	Windows 98 (IE4.0 or more) Windows Me (IE4.0 or more) Windows NT4.0 Workstation (Service Pack5, IE4.0 or more) Windows 2000 (IE4.0 or more) Windows XP Home Edition (IE4.0 or more) Windows XP Professional (IE4.0 or more) Windows Server 2003 (IE4.0 or more)
PC	IBM PC/AT compatible machine
CPU	Pentium II 300MHz or more
Monitor	640x480 Pixels or more of screen resolution 256 or more of colors
Memory	64MB or more
HDD	Free space of 50MB or more
Interface	USB2.0 10/100BASE-TX
Communications protocol	LPR/lp Port9100(RAW) IPP USB2.0

(2) PC-Fax/PC-Internet Fax functions

PC-Fax Send	Yes (with Fax equipped) Maximim of 64 digits for Fax number (including sub-address and passcode)		
PC-Internet Fax Send	Yes (Necessary options: 256MB expansion memory (G model), Internet Fax expansion kit) Maximum of 64 digits for Internet Fax address		
Resolution	200 x 100dpi/200 x 200dpi /200 x 400dpi/400 x 400dpi		
Transmission original sizes	A3/B4/A4/A5/B5/11 x 17/8.5 x 14/8.5 x 11/5.5 x 8.5/8.5 x 13/8K/16K		
Compression method	MH/MMR		
Braodcast transmission	Yes (Fax, Internet Fax mixture possible. Maximum of 500)		
F code transmission	Yes	Sub-address	Yes Maximum of 20 digits
		Passcode	Yes Maximum of 20 digits
Phone book registration/ transmission function	Yes		
Use of MFP phone book	No		
Attach a cover sheet	Yes (Not allowed for bradcast transmission)		
Create cover sheets function	Yes		
Sender print	Yes (Editable by PC-Fax driver for only Japan. Always printed for abroad.)		
Preview function	Yes		
Transmission confirmation (Notice to PC by NJR)	Yes		
Document filing function	Filing	Yes	
	Quick File	Yes	
PC-Fax Transmission log	Yes (Re-transmission not allowed)		
User authentication	Yes		
Timer	No		
R-KEY (SEEG/SEF only)	Yes		

D. Remote PC Functions (Network TWAIN)

Pull scan (TWAIN) specification

Interfaces	NIC	Yes
	USB	No
OS's	Windows 98/Me/2000/XP/2003 Server	
WHQL validated OS's	Windows 2000/XP	
Hardware environment	System: Must satisfy the operational conditions for each OS. HDD: 10MB or more: 100MB or more recommended. Monitor: 800 x 600 dots or more; 256 or more of colors must be available. Other: Network port	
2-sided scan	Yes	
Color modes	Mono 2 gradation/Mono Diffusion/Grayscale/Full Color	
Resolutions	75dpi/100dpi/150dpi/200dpi/300dpi/400dpi/ 600dpi or custom: 50-9600dpi	
Scanning ranges	A3/A4/A4-R/A5/A5-R/B4/B5/B5-R/11 x 17/ 8.5 x 11/8.5 x 11-R/7.25 x 10.5/7.25 x 10.5-R/ 8.5 x 13/5.5 x 8.5/5.5 x 8.5-R/8.5 x 14/Postcard/ 8K/16K/16K-R/Auto/Auto(Mixed size)/Custom * "Auto" includes the same width (Mix). "Auto (Mixed size)" means random.	
Preview function	Yes	
Zoom preview function	Yes	
Rotated scan	Yes (90-degree/ 180-degree/ 270-degree)	
Brightness/contrast adjustment	Auto/ manual (-100 – +100)	
Gamma adjustment	Yes	
Color matching	None/For Printer/For CRT/For LCD/ICM	
Edge emphasis	None/Normal/Sharp/Blur	
Black-white inversion	Yes	
Selection of illuminant color	Yes (Red/Green/Blue/White)	
Selection of threshold value	Auto/ manual (1 – 254)	
Addition of void area	Allowed (4 sides; 2.5mm for each)	
Save of setup contents	Yes	
Save of preview image	Yes	
Display unit of scanning range	Pixel/mm/inch	
Notes's security function	Yes	
Image acquision method from the main unit	Non-compression	

E. Printer function

(1) Platform

- IBM PC/AT compatible machine
- Macintosh

(2) Support OS

Custom PS	Windows 98/Me
	Windows NT 4.0 SP5 or later Windows 2000 Windows XP Windows Server 2003
Custom PCL5c/6	Windows 98/Me
	Windows NT 4.0 SP5 or later Windows 2000 Windows XP Windows Server 2003
PPD	Windows 98/Me
	Windows NT 4.0 SP5 or later Windows 2000 Windows XP Windows Server 2003
	MacOS 9.0-9.2.2, x 10.1.5, x 10.2.8, x 10.3.3 – 10.3.9, x 10.4
SPLC-c	Windows 98/Me
	Windows 2000 Windows XP Windows Server 2003
WHQL	Windows 2000 Windows XP

(3) Command system

Command system	MX-2300G/2700G	MX-2300N/2700N
SPLC-c	Standard	No
PCL5c compatible	Option (Printer expansion kit: MX-PBX1)	Standard
PCL6 compatible		
BMLinkS	No	
PS3 compatible	Option (PS3 expansion kit: MX-PKX1)	
EFI controller	No	

(4) Installed fonts

For PCL5c/ PCL6 compatible	Roman outline fonts = 80 types Line printer font (Bitmap) = 1 type	Standard (MX-2300N/2700N) Option (MX-2300G/2700G)
	Bar code fonts = 28 types (Can be provided by the flash ROM kit as well)	Option
For PS3	Roman outline fonts = 136 types	Option

(5) Print channel

Support print channel	• USB2.0 (high speed) • PSERVER/RPRINT for netware environment • LPR • IPP • PAP: EtherTalk (AppleTalk) • FTP • NetBEUI • Raw Port (Port9100) • HTTP (Web Submit Print) • POP3 (E-Mail To Print)
USB	USB 1.1: Windows 98/Me/2000/Server 2003/XP only USB 2.0 (High speed): Windows 2000/XP only
PSERVER/ RPRINT for NetWare environment	Print channel in PSERVER/PRINT mode to be used in netware environment
LPR	UNIX LPR/LPD command-compatible print channel
IPP	Print channel in compliance with IPP1.0
PAP: EtherTalk (AppleTalk)	Print channel to be used for Machintosh environment
FTP	Equipped with the function to print data received via built-in FTP server
NetBEUI	Microsoft NetBEUI compatible print channel
Port9100	9100 TCP port (Raw Port) supported

(6) Command Compatibility

PCL5c compatibility	PCL5c must be compatible with HP Color Laser Jet 4600.
PCL XL compatibility	PCL XL must be compatible with HP Color Laser Jet 4600.
PostScript compatibility	Must be compatible with Adobe PS3.

(7) Environmental settings

Setting item	Overview
Initial setting	Basic settings for printer use such as number of copies or printing direction.
PCL seting	Setting of PCL symbols and fonts
PS setting	Whether or not printing is allowed upon PS error is to be set up.

(8) Print functions

Function	Content	PCL6/5c (G model: option)	PS (Option)	SPLC-c (G model)
Multiple Pamphlet	Binds multiple pamphlet outputs into a single booklet.	Yes	Yes	No
Bar code font	JetCAPS BarDIMM emulation	Yes	No	No
Network tandem print	Two units connected via network can be used simultaneously for a printout.	Yes	Yes (Windows only)	No
Encryption PDF/PDF/ TIFF/JPEG direct print	PDF/TIFF/JPEG file can be printed without printer driver. 1) Printing of e-mail attachment file 2) Printing from FTP server 3) Printing from setup file on Web page 4) USB memory	Yes (No for encrypted PDF/PDF)	Yes	No
E-Mail To Print	Direct printing of an attached file upon receipt of the e-mail.	Yes	Yes	No
Pull print from front panel	Browsing of FTP server from front panel and pull-printing of a specified file (direct printing).	Yes	Yes	No
Print by file setup on Web page [Web Submit Print]	Setting and direct printing of a file on network through Web page.	Yes	Yes	No
Continuous print function	The function executes multiple print jobs continuously as if they are one single job even if the unit receives an end of job command, in order to support print from the application assuming printout on continuous pages.	Yes	Yes	No
ROPM	The function enables the printout of a multiple number of copies in one RIP processing.	Yes	Yes	Yes
Multi-access	RIP processing must be allowed during printing. Printing must also be allowed during scanning.	Yes	Yes	Yes
Paper direction setting for 2-sided printing of letterhead paper and pre-punched paper.	Pages with front-back attribute such letterhead or punch paper are to be printed correctly in front-back page order for 2-sided printing.	Yes	Yes	Yes
Enable selected paper type in bypass tray	For setting of bypass tray, even if the setup values on the main unit side do not match with those on the driver side, the printing will be executed in the setting of the driver regardless of the setup values on the main unit side.	Yes	Yes	Yes
Setting environmental control under terminal server control	Print setting of each client is memorized under meta frame environment (auto print create environment). (Setup for each log-in can be skipped.)	Yes	Yes	Yes
Driver delivery function	PAU4.0 allows the administrator to deliver a driver to clients.	Yes	Yes	Yes
Form overlay	The function downloads a form to the main unit beforehand, sends the contained data only, and inserts the data into the form in the main unit for printout.	Yes (5c only)	No	No
Planet Press	Object Lune Corporation's Planet Press (Software to execute the mapping of forms (DL beforehand) and variable data in the printer interior)	Yes	Yes	No
Improvement of downloading method of font form	This expands the function to prevent the deletion and overwriting of the editing functional enhancement font/form on Web page. A unified UI for the lineup is necessary. Currently, registration is done by Web page and deleted by PJL. This function is supported by HDD.	Yes (5c only)	Yes	No
Management of password by hidden Web page	The purpose is to prevent the access even if the hidden Web page address becomes known.	Yes	Yes	Yes
Expansion font list	In self-print of a font list, ESC command information is needed for BITMAP font.	Yes (5c only)	No	No

Function	Content	PCL6/5c (G model: option)	PS (Option)	SPLC-c (G model)
Bonjour for Macintosh environment	This technology detects and connects peripheral equipment on the network automatically. The dynamic network connection (computer, peripheral equipment and software) is possible without user setting.	No	Yes	No
Document control	When printing, the unique pattern for prevention against unauthorized copy is embedded in printing.	Yes (OPT)	Yes (OPT)	Yes (OPT)
Object judgement (screen change/color change)	In the printer color mode output, object of image data (area of photograph/graphic text) is judged. Print screen (resolution) and profile (color) are changed automatically.	PCL6: Yes PCL5: No	Yes	No
CMYK Simulation	Choice of CMYK simulation is as follows. 1) Default 2) Custom Default is defined depending on the destination of service simulation. 1. Japan = Japan Color 2. North America / China / Other abroad inch type = SWOP 3. Europe / Other abroad AB type = Euroscale Custom profile can upload by Web setting. Notation of driver is Custom. Example: Use SWOP profile in Japan.	No	Yes	No
ICC Profile	<Source Profile> Choice of source profile is as follows. • sRGB • AppleRGB • Custom Custom profile can upload by Web setting. (The attached ICC profile on devices is available.) <Output Profile> There is no user selection for output profile. Sharp provides Custom profile. Upload of profile supports by service. The tool is set on the Web (service setting). The concrete method of profile making is to be considered separately.	Yes	Yes	No
Pantone color	For Pantone color support, the profile upload can be made by Web setting.	No	Yes	No

(9) Windows driver function

PCL5-c/6: N mode standard, G model option (Installation of the printer expansion kit (MX-PBX1) and expansion of memory (256MB) are required.)

PS: Option (Installation of the printer expansion kit (MX-PBX1) and the PS3 expansion kit (MX-PKX1) and expansion of memory (256MB) are required.)

SPLC-c: G model only

a. Frequently used functions

Function	PCL5-c/6	PS	SPLC-c	PPD
Copies (Copy processing by MFP/Printer firmware)	1-999			
Orientation	Portrait/Landscape			
Duplex	2-Sided (Book) 2-Sided (Tablet)			
Pamphlet (Pamphlet processing by MFP/Printer firmware)	2-Up Pamphlet			N/A
	Tiled Pamphlet			
	Multiple 2-Up Pamphlet		N/A	
	Multiple Tiled Pamphlet		N/A	
Binding Edge	Top/Left/Right			N/A
N-Up Printing	1-Up, 2-Up, 4-Up, 6-Up, 8-Up, 9-Up, 16-Up			(Windows NT: N/A) (Windows 9x: 1-Up/2-Up/4-up)
Black N-Up Border	Yes/No			N/A
N-Up Order	[2-Up] Left to Right Right to Left [4, 6, 8, 9, 16-Up] Right, and Down Down, and Right Left, and Down Down, and Left			

b. Paper feed system

Function	PCL5-c/6	PS	SPLC-c	PPD
Paper Size	A2 (Fit To Page) (PCL6 only)	N/A	A2 (Fit To Page)	N/A
	12 x 18, A3, A4, A5, B4, B5, 11 x 17, 8.5 x 11, 8.5 x 14, 7.25 x 10.5, 8.5 x 13, 5.5 x 8.5, 8K, 16K, DL, C5, COM10, Monarch, Custom Paper			
Paper Selection	Paper Source Paper Type			Auto Selection/ Paper Source / Paper Type
Different Paper	Cover Page			N/A
	Last Page		N/A	
	Other Page		N/A	
Transparency Inserts	Blank/Printed			
Tab Printing	Image Shift			N/A
	Tab Paper Printing (PCL6 only)	N/A		
Set Tray Status	Set Paper Size Set Paper Type			N/A
Paper Type Name (USER TYPE 1-7)	Display Name			N/A
Input Tray Options	Two Trays/Three Trays/Four Trays			N/A

c. Paper exit method

Function	PCL5-c/6	PS	SPLC-c	PPD
Output Tray	Center Tray/Right Tray/Offset Tray/Saddle Stitch Tray			
Staple	None/1-Staple/2-Staples			
Punch	Yes/No			
No Offset	Yes/No			
Large Capacity Tray	None/MX-LCX1			
Output Tray Options	None/Finisher/Saddle Stitch Finisher			
Punch Module	None/2 Holes/3 Holes/4 Holes/4 Holes (Wide)			
Right Tray	Yes/No			

d. Exposure

<table>
<tr><th>Function</th><th>PCL5-c/6</th><th>PS</th><th>SPLC-c</th><th>PPD</th></tr>
<tr><td>Resolution</td><td>600 x 600dpi
300 x 300dpi</td><td>1200 x 600dpi
(monochrome only)
600 x 600dpi</td><td>600 x 600dpi
300 x 300dpi</td><td>600 x 600dpi</td></tr>
<tr><td>Color Mode</td><td colspan="4">Auto/Color(CMYK)/Monochrome (K only)</td></tr>
<tr><td rowspan="4">ICM Method (Cannot be specified with the monochrome mode)</td><td>N/A</td><td>OFF</td><td>N/A</td><td>OFF</td></tr>
<tr><td colspan="4">System (Windows ICM). Effective only when Color Options is Custom.
Windows NT: N/A</td></tr>
<tr><td colspan="2">Printer</td><td>N/A</td><td>Printer</td></tr>
<tr><td colspan="2">N/A</td><td>Driver</td><td>N/A</td></tr>
<tr><td>Rendering Intent (Cannot be specified with the monochrome mode)</td><td colspan="3">When ICM Method is anything other than Custom: Default
When ICM Method is Custom:
Perceptual matching
Relative colorimetric
Saturation matching
Absolute colorimetric</td><td>Perceptual matching
Relative colorimetric
Saturation matching
Absolute colorimetric</td></tr>
<tr><td>ICC Profile Selection (Cannot be specified with the monochrome mode)</td><td colspan="2">Source Profile (Monitor Profile)
When Windows ICM is off:
None
sRGB
Apple RGB
Custom
When Windows ICM is on:
Monitor Profile installed in PC</td><td>When Windows ICM is off:
None
sRGB
Apple RBG</td><td>Source Profile (Monitor Profile)
sRGB
Apple RGB
Custom</td></tr>
<tr><td rowspan="2">Print Priority (Cannot be specified with the monochrome mode)</td><td colspan="2">1 bit or 2 bit</td><td>1bit only</td><td>1 bit or 2 bit</td></tr>
<tr><td colspan="2">2 bit or 4 bit</td><td>N/A</td><td>2 bit or 4 bit</td></tr>
<tr><td>Contrast
* Some OS may not allow one-number-to-next specification for setup values.</td><td colspan="3">0-100</td><td>N/A</td></tr>
<tr><td>Brightness
* Some OS may not allow one-number-to-next specification for setup values.</td><td colspan="3">0-100</td><td>N/A</td></tr>
<tr><td>Saturation (Cannot be specified with the monochrome mode)
* Some OS may not allow one-number-to-next specification for setup values.</td><td colspan="3">0-100</td><td>N/A</td></tr>
<tr><td>Color Balance (RGB) (Cannot be specified with the monochrome mode)
* Some OS may not allow one-number-to-next specification for setup values.</td><td colspan="3">0-100</td><td>N/A</td></tr>
<tr><td>Text To Black (Can be specified only with the monochrome mode)</td><td colspan="3">Yes/No</td><td>N/A</td></tr>
<tr><td>Vector To Black (Can be specified only with the monochrome mode)</td><td colspan="3">Yes/No</td><td>N/A</td></tr>
<tr><td>Toner Save (1bit only)</td><td colspan="2">Yes/No</td><td>N/A</td><td>Yes/No</td></tr>
<tr><td>Screen Setting (Cannot be specified with the monochrome mode)</td><td colspan="4">Default
Photo
Text & Graphic</td></tr>
<tr><td>Pure Black Print (Cannot be specified with the monochrome mode)</td><td>N/A</td><td>Yes/No</td><td>N/A</td><td>Yes/No</td></tr>
<tr><td>Black Overprint (Cannot be specified with the monochrome mode)</td><td>N/A</td><td>Yes/No</td><td>N/A</td><td>Yes/No</td></tr>
<tr><td>CMYK Simulation (Cannot be specified with the monochrome mode)</td><td>N/A</td><td>Yes/No
In case of Yes:
Default /Custom</td><td>N/A</td><td>Off/
Default/Custom</td></tr>
<tr><td>Bitmap Compression</td><td>None
(PCL6 only)</td><td>None</td><td>N/A</td><td>N/A</td></tr>
<tr><td rowspan="2">Image Type</td><td colspan="4">Standard/Graphics/Photo/Custom</td></tr>
<tr><td colspan="2">CAD</td><td>N/A</td><td>CAD</td></tr>
<tr><td>Neutral Grays (Cannot be specified with the monochrome mode)</td><td colspan="2">Black Only
4-Color</td><td>N/A</td><td>Black Only
4-Color</td></tr>
</table>

e. Font

Function	PCL5-c/6	PS	SPLC-c	PPD
Font Source	Resident Font Download Font			N/A
Font Substitution	N/A			
Download Font Type	TrueType (Type 42)		N/A	Yes
	Bitmap (Type 3)		N/A	
	N/A	Adobe (Type1)	N/A	
	As Graphics	N/A		

f. Other functions

Function	PCL5-c/6	PS	SPLC-c	PPD
Watermark	Transparent Text			
	Overwrite Text			
	Outline Text			
	Yes (PCL6 only)	Image Stamp		N/A
Overlay	Create Overlay Load Overlay Delete Query Page Overlay		N/A	
Rotate 180 degrees	Yes/No			Yes/No
Collate	Yes/No			
Carbon Copy	Top Copy Carbon Copy		N/A	
Fit To Page	A3, A4, A5, B4, B5, 11 x 17, 8.5 x 11, 8.5 x 14, 7.25 x 10.5/8.5 x 13/5.5 x 8.5, 8K, 16K, DL, C5, COM10, Monarch			N/A
Poster	2 x 2/3 x 3/ 4 x 4 (PCL6 only)	2 x 2/3 x 3/4 x 4		N/A
Poster Dash Border	Yes/No (PCL6 only)	Yes/No		N/A
Poster Overlap	Yes/No (PCL6 only)	Yes/No		N/A
Margin Shift (Margin Shift processing by MFP/Printer firmware	None/10mm (0.4 inch)/20mm (0.8 inch)/30mm (1.2 inch)			
Zoom	25% – 400%			
	N/A	X-Y Zoom	N/A	
Mirror Image	N/A	No Mirror Image Vertical Horizontal	N/A	None Vertical Horizontal
Graphics Mode	Vector / Raster	N/A		
PS Pass Through	N/A	Yes/No	N/A	
PS Error Printing	N/A	Yes/No	N/A	Yes/No
Job Compression	N/A	None/ Fastest/Fast/ Medium/Best Compression	N/A	
Retention	Hold Only Hold After Printd Sample Print Password			N/A
Document Filing	Quick File Main Folder Custom Folder			N/A
User Authentication	Login Name Password			N/A
Job ID	User Name Job Name			N/A
Notify Job End	Yes/No			N/A

Function	PCL5-c/6	PS	SPLC-c	PPD
Auto Job Control Review	Yes/No			N/A
Tandem Print	Yes/No		N/A	
Set Tandem Print	IP Address (Slave Machine)		N/A	
Auto Configuration	Yes			N/A

(10) Macintosh driver functions

a. Frequently used functions

Function	OS9 PPD	OSX 10.1	OSX 10.2/3/4
Copies	1-999		
Orientation	Portrait/Landscape		
Duplex	2-Sided (Long) 2-Sided (Short)		
Pamphlet (Pamphlet processing by MFP/ Printer firmware)	Tiled Pamphlet		
	Multiple Tiled Pamphlet (Only more than 10.2)		
Binding Edge	Top/Left/Right	N/A	Top/Left/Right
N-Up Printing	1-Up/2-Up/4-Up/6-Up/9-Up/16-Up		
N-Up Border	Yes/No		
N-Up Order	[2-Up] Left to Right Right to Left [4, 6, 8, 9, 16-Up] Right, and Down Down, and Right Left, and Down Down, and Left		

b. Paper feed method

Function	OS9 PPD	OSX 10.1	OSX 10.2/3/4
Paper Size Setting	12 x 18, A3, A4, A5, B4, B5, 11 x 17, 8.5 x 11, 8.5 x 14, 7.25 x 10.5, 8.5 x 13, 5.5 x 8.5, 8K, 16K, DL, C5, COM10, Monarch, Custom Paper		
Paper Selection	Auto Select Paper Source Paper Type		
Different Paper	Cover Page		
Transparency Inserts	Blank/Printed		
Tab Printing	N/A		
Set Tray Status	N/A		
Paper Type Name (USER TYPE 1-7)	Yes		
Input Tray Options	Two Trays/ Three Trays/ Four Trays	N/A	Two Trays/ Three Trays/ Four Trays

c. Paper exit method

Function	OS9 PPD	OSX 10.1	OSX 10.2/3/4
Output Tray	Center Tray/Right Tray/Offset Tray/Saddle Stitch Tray		
Staple	None/1-Staple/2-Staples		
Punch	Yes/No		
No Offset	Yes/No		
Large Capacity Tray	None/MX-LCX1	N/A	None/MX-LCX1
Output Tray Options	None/ Finisher/ Saddle Stitch Finisher	N/A	None / Finisher/ Saddle Stitch Finisher
Punch Module	None / 2 Holes / 3 Holes / 4 Holes / 4 Holes (Wide)	N/A	None / 2 Holes / 3 Holes / 4 Holes / 4 Holes (Wide)
Right Tray	Yes/No	N/A	Yes/No

d. Exposure

Function	OS9 PPD	OSX 10.1	OSX 10.2/3/4
Resolution	600 x 600dpi		
Color Mode	Auto/Color (CMYK) /Monochrome (K only)		
ICM Method ColorSync (Cannot be specified with the monochrome mode) * Specification depending on OS	OFF	N/A	OFF
	System	N/A	System (10.3 only)
	Printer		
Rendering Intent * Specification depending on OS	Perceptual matching Relative colorimetric Saturation matching Absolute colorimetric		
ICC Profile Selection (Cannot be specified with the monochrome mode) * Specification depending on OS	Source Profile (Monitor Profile) sRGB Apple RGB Custom	N/A	Source Profile (Monitor Profile) sRGB Apple RGB Custom (10.3 only)
Print Priority (Cannot be specified with the monochrome mode)	1 bit or 2 bit		
	2 bit or 4 bit		
Contrast * Some OS may not allow one-number-to-next specification for setup values	N/A		
Brightnesst * Some OS may not allow one-number-to-next specification for setup values	N/A		0-100
Saturationt (Cannot be specified with the monochrome mode) * Some OS may not allow one-number-to-next specification for setup values	N/A		0-100
Color Balance (RGB) (Cannot be specified with the monochrome mode) * Some OS may not allow one-number-to-next specification for setup values	N/A		
Text To Black	N/A		
Vector To Black	N/A		
Toner Save (1bit only)	Yes/No		
Screen Setting (Cannot be specified with the monochrome mode)	Default Photo Test & Graphic		
Pure Black Print (Cannot be specified with the monochrome mode)	Yes/No		
Black Overprint (Cannot be specified with the monochrome mode)	Yes/No		
CMYK Simulation (Cannot be specified with the monochrome mode)	Off Default Custom		
Bitmap Compression	N/A		
Image Type	Standard/Graphic/Photo/CAD/Custom		
Neutral Grays (Cannot be specified with the monochrome mode)	Black Only 4-Color		

e. Font

Function	OS9 PPD	OSX 10.1	OSX 10.2/3/4
Font Source (Resident Font/Download Font)	N/A		
Font Substitution	N/A		
Download Font Type	Yes	N/A	

f. Other functions

Function	OS9 PPD	OSX 10.1	OSX 10.2/3/4
Watermark	Transparent Text/Overwrite Text/Outline Text		
Overlay	N/A		
Rotate 180 degrees	Yes/No	N/A	Yes/No
Collate	Yes/No		
Carbon Copy	N/A		
Fit To Page	N/A		
Poster	N/A		
Black Poster Border	N/A		
Poster Overlap	N/A		
Margin Shift (Margin Shift processing by MFP/ Printer firmware	None/10mm/20mm/30mm (1.2inch)		
Zoom	25% – 400%		
Mirror	None Vertical Horizontal	N/A	
Graphics Mode	N/A		
PS Pass through	N/A		
PS Error Printing	Yes/No		
Job Compression	N/A		
Retention	Hold Only, Hold After Print, Sample Print, Pass Code	N/A	Hold Only, Hold After Print, Sample Print, Pass Code
Document Filing	N/A		Quick File Main Folder Custom Folder
User Authentication	Login Name Password	N/A	Login Name Password
Job ID	N/A		User Name Job Name
Notify Job End	N/A		
Auto Job Control Review	N/A		
Tandem Print	N/A		Yes/No
Set Tandem Print	N/A		IP Address (Slave Machine)
Auto Configuration	Yes	N/A	Yes (10.3 only)

F. Document filing function

(1) Basic function

Capacity for document filing	Main folder Custom folder	10GB
	Quick file folder	10GB
Pages or files for allowed for filing	Main folder Custom folder	1,400 pages or 1,000 files (SHARP standard document)
	Quick file folder	1,400 pages or 1,000 files (SHARP standard document)
Maximum number of user folder	Maximum of 500 folders	
Number of users allowed for registration	Depends on the number of user registrations. (Maximum of 200 users)	

(2) Data saving for each function

Job	Quick File Folder		Main/Custom Folder	
	Shared storage	Confidential storage	Shared storage	Confidential storage
Copy	Yes	No	Yes	Yes
Printer	Yes		Yes	Yes
Direct print (FTP)	Yes		No	No
Direct print (e-mail)	Yes		Yes	No
Direct print (Web)	Yes		No	No
Scan to e-mail/FTP	Yes		Yes	No
Scan to SMB	---		---	---
Scan to USB memory	---		---	---
Fax reception	No		No	No
Fax transmission	Yes		Yes	No
Internet Fax reception	No		No	No
Internet Fax transmission	Yes		Yes	No
PC-Fax/PC-Internet Fax transmisson	Yes		Yes	Yes
Remote PC Scan	---		---	---
Scan to HDD	No		Yes	Yes

G. Safety and environmental protection standards

(1) Safety standards

	100V type	200V type
Safety standard	Electrical safety law: J60950(compliant) UL60950, 21CFR (Laser) CSA C22.2 No.60950 CNS14336 (Taiwan)	EN60950 IEC60825 (Laser) GB4943 (China)
EMC	VCCI Class A FCC Class B High harmonic guideline ICES Class B (Canada) CNS 13438 (Taiwan)	EN55022 Class A CISPR22 Class A EN61000-3-2 EN61000-3-3 GB9254, GB17625.1, GB/T17618 (China)
Line standard (for Fax expansion)	Validation of Technology Standard Conformance (Electrical Communications Project Law) FCC part 68 ICCS-03 PSTN01 (Taiwan)	TS 103 021, EG 201 120, EG 201 121 (Europe) AS/ACIF S0002 (Australia) GB/T 3382.1-2003, GB/T 3382.2-2003, YD/T 514-1998, YD/T 589-1996, YD/T 703-1993, YD/T 965-1998, YD/T 993-1998 (China)

(2) Environmental Readiness

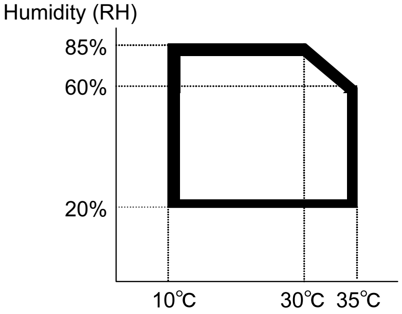
- International Energy Star Program MFP (EPA)
- The Eco Mark Program
- Environmental Choice Program (ECP)
- New Blue Angel
- Nordic Swan
- European ROHS regulations
- Chinese ROHS
- WEEE (Following to SHARP super green product declaration.)

3. Ambient conditions

A. Operating environmental conditions (Main unit)

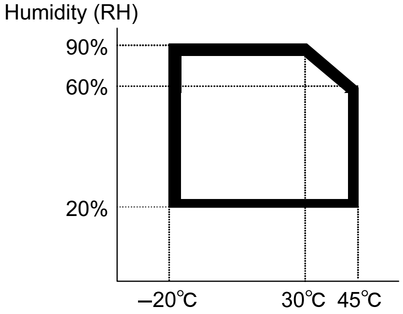
Temperature: 10°C – 35°C, Humidity: 20 – 85%RH

Air pressure: 590 – 1013hPa (height: 0 – 2000m)



B. Ambient conditions for transporting (Main unit)

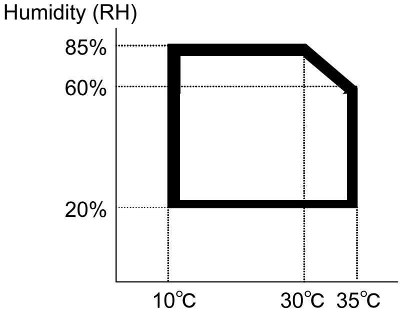
–20°C to 45°C (No condensation)



C. Standard environmental conditions (Supply)

- An available life time under an environmental condition.
  1) Photoconductor drum
     36 months from the production month
  2) Photoconductor drum unit
     24 months from the production month
  3) Toner (K)/Color toner (C/M/Y)
     24 months from the production month

D. Operating environmental conditions (Supply)



E. Ambient conditions for transporting

–20°C to 45°C (No condensation)

F. Ambient storage conditions (Supply) (packed conditions)

–10°C to 40°C (No condensation)

[3] CONSUMABLE PARTS

1. Supply system table

A. USA/Canada/South and Central America

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1 (Black toner : Net 440g)	18K *1	MX-27NTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 15K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1 (Cyan toner : Net 352g)	15K *1	MX-27NTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1 (Magenta toner : Net 352g)	15K *1	MX-27NTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1 (Yellow toner : Net 352g)	15K *1	MX-27NTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer Cartridge (Black)	Developer Cartridge (Black) x 1 (Black developer : Net 265g)	100K	MX-27NVBA	
6	Developer Cartridge (Cyan/Magenta/Yellow)	Developer Cartridge (Cyan/Magenta/Yellow) x 1 (Cyan/Magenta/Yellow developer : Net 265g)	60K	MX-27NVSA	
7	Drum	OPC Drum x 1	100K (Black) 60K (Color)	MX-27NRSA	
8	Drum Unit	Drum Unit (OPC Drum/Unit Parts included) x 1 Color identification seal (Bk/C/M/Y) x 1 each x 1	100K (Black) 60K (Color)	MX-27NUSA	

*1: The toner life may vary depending on the document density and temperature and humidity.

B. European Subsidiary/Australia/New Zealand

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1 (Black toner : Net 440g)	18K *1	MX-27GTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 15K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1 (Cyan toner : Net 352g)	15K *1	MX-27GTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1 (Magenta toner : Net 352g)	15K *1	MX-27GTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1 (Yellow toner : Net 352g)	15K *1	MX-27GTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer Cartridge (Black)	Developer Cartridge (Black) x 1 (Black developer : Net 265g)	100K	MX-27GVBA	
6	Developer Cartridge (Cyan/Magenta/Yellow)	Developer Cartridge (Cyan/Magenta/Yellow) x 1 (Cyan/Magenta/Yellow developer : Net 265g)	60K	MX-27GVSA	
7	Drum	OPC Drum x 1	100K (Black) 60K (Color)	MX-27GRSA	
8	Drum Unit	Drum Unit (OPC Drum/Unit Parts included) x 1 Color identification seal (Bk/C/M/Y) x 1 each x 1	100K (Black) 60K (Color)	MX-27GUSA	

*1: The toner life may vary depending on the document density and temperature and humidity.

C. Asia-Subsidiary/Hong Kong

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1 (Black toner : Net 440g)	18K *1	MX-27ATBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 15K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1 (Cyan toner : Net 352g)	15K *1	MX-27ATCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1 (Magenta toner : Net 352g)	15K *1	MX-27ATMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1 (Yellow toner : Net 352g)	15K *1	MX-27ATYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer Cartridge (Black)	Developer Cartridge (Black) x 1 (Black developer : Net 265g)	100K	MX-27AVBA	
6	Developer Cartridge (Cyan/Magenta/Yellow)	Developer Cartridge (Cyan/Magenta/Yellow) x 1 (Cyan/Magenta/Yellow developer : Net 265g)	60K	MX-27AVSA	
7	Drum	OPC Drum x 1	100K (Black) 60K (Color)	MX-27ARSA	
8	Drum Unit	Drum Unit (OPC Drum/Unit Parts included) x 1 Color identification seal (Bk/C/M/Y) x 1 each x 1	100K (Black) 60K (Color)	MX-27AUSA	

*1: The toner life may vary depending on the document density and temperature and humidity.

D. Middle East/Africa/Israel/Philippines/Taiwan

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1 (Black toner : Net 440g)	18K *1	MX-27FTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 15K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1 (Cyan toner : Net 352g)	15K *1	MX-27FTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1 (Magenta toner : Net 352g)	15K *1	MX-27FTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1 (Yellow toner : Net 352g)	15K *1	MX-27FTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer Cartridge (Black)	Developer Cartridge (Black) x 1 (Black developer : Net 265g)	100K	MX-27FVBA	
6	Developer Cartridge (Cyan/Magenta/Yellow)	Developer Cartridge (Cyan/Magenta/Yellow) x 1 (Cyan/Magenta/Yellow developer : Net 265g)	60K	MX-27FVSA	
7	Drum	OPC Drum x 1	100K (Black) 60K (Color)	MX-27FRSA	
8	Drum Unit	Drum Unit (OPC Drum/Unit Parts included) x 1 Color identification seal (Bk/C/M/Y) x 1 each x 1	100K (Black) 60K (Color)	MX-27FUSA	

*1: The toner life may vary depending on the document density and temperature and humidity.

E. China

No.	Item	Content	Life	Model Name	Remarks
1	Toner Cartridge (Black)	Toner Cartridge (Black) with IC Chip x 1 (Black toner : Net 440g)	18K *1	MX-27CTBA	* Life: A4/Letter size at Area Coverage 5% (Reference: 15K for A4/Letter 6%)
2	Toner Cartridge (Cyan)	Toner Cartridge (Cyan) with IC Chip x 1 (Cyan toner : Net 352g)	15K *1	MX-27CTCA	* Life: A4/Letter size at Area Coverage 5%
3	Toner Cartridge (Magenta)	Toner Cartridge (Magenta) with IC Chip x 1 (Magenta toner : Net 352g)	15K *1	MX-27CTMA	* Life: A4/Letter size at Area Coverage 5%
4	Toner Cartridge (Yellow)	Toner Cartridge (Yellow) with IC Chip x 1 (Yellow toner : Net 352g)	15K *1	MX-27CTYA	* Life: A4/Letter size at Area Coverage 5%
5	Developer Cartridge (Black)	Developer Cartridge (Black) x 1 (Black developer : Net 265g)	100K	MX-27CVBA	
6	Developer Cartridge (Cyan/Magenta/Yellow)	Developer Cartridge (Cyan/Magenta/Yellow) x 1 (Cyan/Magenta/Yellow developer : Net 265g)	60K	MX-27CVSA	
7	Drum	OPC Drum x 1	100K (Black) 60K (Color)	MX-27CRSA	
8	Drum Unit	Drum Unit (OPC Drum/Unit Parts included) x 1 Color identification seal (Bk/C/M/Y) x 1 each x 1	100K (Black) 60K (Color)	MX-27CUSA	

*1: The toner life may vary depending on the document density and temperature and humidity.

2. Maintenance parts list

A. U.S.A/Canada/South and Central America/Asia/Middle East/Agencies

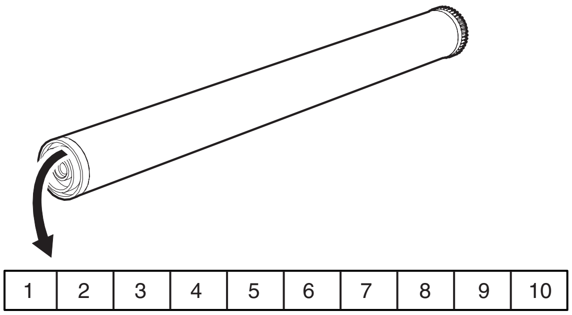
No.	Item	Content		Life	Model name	Remarks
1	Heat roller kit	Upper heat roller	x 1	200K	MX-270HK	
		Fuser gear	x 1			
		Upper separation pawl	x 4			
		Upper thermistor sub	x 1			
		Upper heat roller bearing	x 2			
		Lower heat roller	x 1			
		Lower thermistor	x 1			
		Lower heat roller bearing	x 2			
2	Primary transfer kit	Intermediate transfer belt	x 1	100K	MX-270Y1	
		Primary transfer blade	x 1			
		Primary transfer conductive collar	x 4			
		Transfer cleaning roller	x 1			
		PS paper dust removal cleaner	x 1			
3	Secondary transfer kit	Secondary transfer belt	x 1	300K	MX-270Y2	
		Secondary transfer roller	x 1			
		Secondary drive idle gear	x 1			
		Upper thermistor	x 1			
		Primary transfer roller	x 4			
		Belt drive gear	x 1			
4	Filter kit	Ozone filter PA	x 1	100K	MX-270FL	
5	Waste toner box kit	Waste toner box unit (with LSU cleaner x 3)	x 1	50K	MX-270HB	Each color 5% coverage, color ratios 25%
6	DV seal kit	DV seal	x 3	Black: 100K, Color: 60K	MX-270DS	
		DV side seal F/R	x 3			
		Toner filter	x 3			
7	Staple cartridge	Staple cartridge	x 3	5000 times	AR-SC2	For saddle finisher
8	Staple cartridge	Staple cartridge	x 3	5000 times	MX-SCX1	For inner finisher
9	Primary transfer belt unit	For service rotation	x 1		MX-270U1	
10	Secondary transfer belt unit	For service rotation	x 1		MX-270U2	
11	Fusing unit	For service rotation (Heater lamp 120V)	x 1		MX-270FU1	
		For service rotation (Heater lamp 230V)	x 1		MX-270FU	

B. Europe/UK/Australia/New Zealand/Taiwan

No.	Item	Content		Life	Model name	Remarks
1	Upper heat roller kit	Upper heat roller	x 1	200K	MX-270UH	
		Fuser gear	x 1			
		Upper separation pawl	x 4			
		Upper thermistor sub	x 1			
		Upper heat roller bearing	x 2			
2	Lower heat roller kit	Lower heat roller	x 1	200K	MX-270LH	
		Lower thermistor	x 1			
		Lower heat roller bearing	x 2			
3	Primary transfer kit	Intermediate transfer belt	x 1	100K	MX-270B1	
		Primary transfer blade	x 1			
		Primary transfer conductive collar	x 4			
		Transfer cleaning roller	x 1			
		PS paper dust removal cleaner	x 1			
4	Primary transfer roller kit	Primary transfer roller	x 4	300K	MX-270X1	
		Belt drive gear	x 1			
5	Secondary transfer belt kit	Secondary transfer belt	x 1	300K	MX-270B2	
6	Secondary transfer roller kit	Secondary transfer roller	x 1	300K	MX-270X2	
		Secondary drive idle gear	x 1			
		Upper thermistor	x 1			
7	Filter kit	Ozone filter PA	x 1	100K	MX-270FL	
8	Waste toner box kit	Waste toner box unit (with LSU cleaner x3)	x 1	50K	MX-270HB	Each color 5% coverage, color ratios 25%
9	DV seal kit	DV seal	x 3	Black: 100K, Color: 60K	MX-270DS	
		DV side seal F/R	x 3			
		Toner filter	x 3			
10	Staple cartridge	Staple cartridge	x 3	5000 times	AR-SC2	For saddle finisher
11	Staple cartridge	Staple cartridge	x 3	5000 times	MX-SCX1	For inner finisher
12	Primary transfer belt unit	For service rotation	x 1		MX-270U1	
13	Secondary transfer belt unit	For service rotation	x 1		MX-270U2	
14	Fusing unit	For service rotation (Heater lamp 230V)	x 1		MX-270FU	
		For service rotation (Heater lamp 100V)	x 1		MX-270FU2	

3. Production number identification

A. Drum cartridge


1
2
3
4
5
6
7
8
9
10

The lot number is of 10 digits. Each digit indicates the content as follows.

The number is printed on the flange on the front side. The laser print shows the production year and month.

1: Number
For this model, this digit is 2.

2: Alphabet
Indicates the model conformity code. H for this model.

3: Number
Indicates the end digit of the production year.

4: Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.

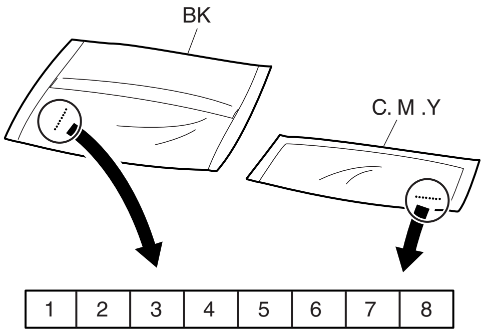
5/6: Number or X, Y, Z
Indicates the production month.
X stands for October, Y November, and Z December.

7: Number
Indicates the production month.
Indicates the day of the month of packing.
X stands for October, Y November, and Z December.

8/9: Number
Indicates the day of the day of packing.

10: Alphabet
Indicates the production factory. "C" for China.

B. Developer


BK
C. M .Y
1
2
3
4
5
6
7
8

The lot number is of 8 digits. Each digit indicates the content as follows.

The number is printed on the right under side of the back surface of the developer bag.

1: Alphabet
Indicates the production factory.

2: Number
Indicates the production year.

3/4: Number
Indicates the production month.

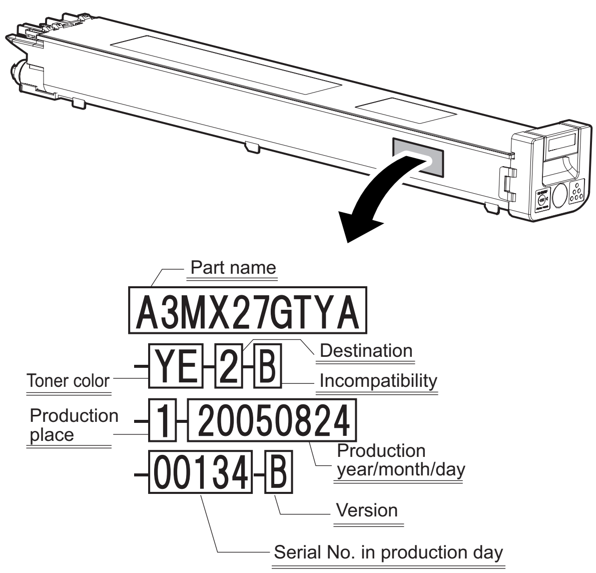
5/6: Number
Indicates the production day.

7: Hyphen

8: Number
Indicates the production lot.

C. Toner cartridge

The label indicating the management number is attached to the side of the toner cartridge.

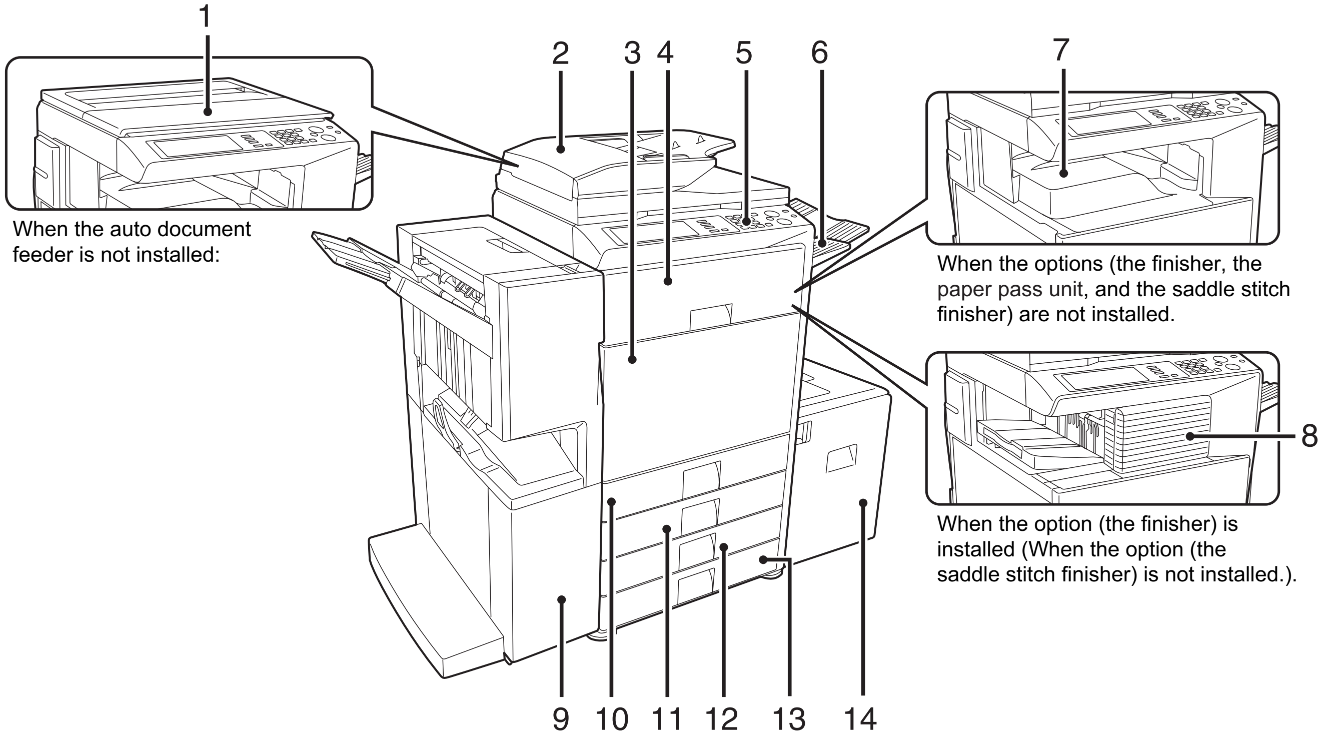

Part name
A3MX27GTYA
YE
2
B
Destination
Toner color
Incompatibility
Production place
1
20050824
Production year/month/day
00134
B
Version
Serial No. in production day

Example: 134th of production on August 24, 2005

[5] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. Identification of each section and functions

A. External view



When the auto document feeder is not installed:

When the options (the finisher, the paper pass unit, and the saddle stitch finisher) are not installed.

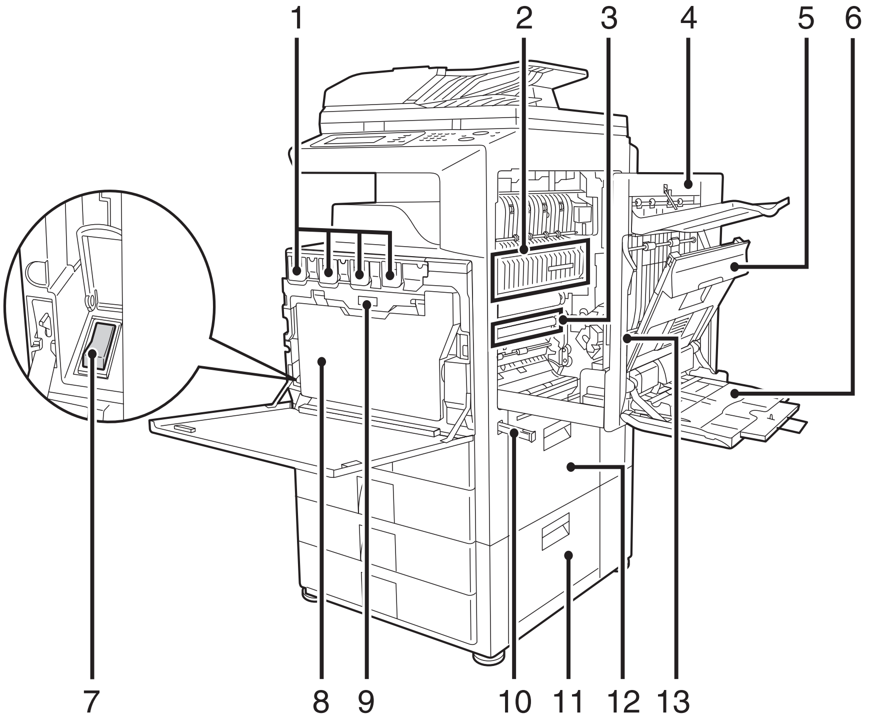
When the option (the finisher) is installed (When the option (the saddle stitch finisher) is not installed.).

No.	Name	Function/ Operation	Note
1	Document cover	Holds a document.	
2	Auto document feeder *1, *2	This automatically feeds and scans multiple originals. Both sides of two-sided originals can be automatically scanned.	
3	Front cover	Open this cover when turning ON/OFF the main power switch or replacing the toner cartridge.	
4	Interface unit *1	Feeds the output paper to the saddle finisher.	
5	Operation panel	Used to set the functions and enter the copy quantity.	
6	Paper exit tray unit (Right tray) *1	Receives discharged paper if installed and set.	
7	Paper exit tray (Center tray)	Copied or printed paper is discharged to this tray.	
8	Finisher *1	Staples paper, and makes punch holes if the punch unit is installed.	
9	Saddle stitch finisher *1	Staples and outputs paper. It is also provided with the center-stapling function. Makes punch holes if the punch unit is installed.	
10	Tray 1	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
11	Tray 2	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
12	Tray 3 (When the stand/1 x 500 sheet paper drawer or the stand/2 x 500 sheet paper drawer is installed) *1	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
13	Tray 4 (When the stand/2 x 500 sheet paper drawer is installed) *1	Stores paper. Max. 500 sheets (80g/m^2, 21lbs)	
14	Tray 5 (When the large capacity paper feed tray is installed) *1	Stores paper. Max. 3500 sheets (80g/m^2, 21lbs)	

*1: Peripheral unit (option): The peripheral units are options. Some model is provided with this unit as a standard unit.

*2: The MX-2300N/2700N are equipped standard with peripheral unit.

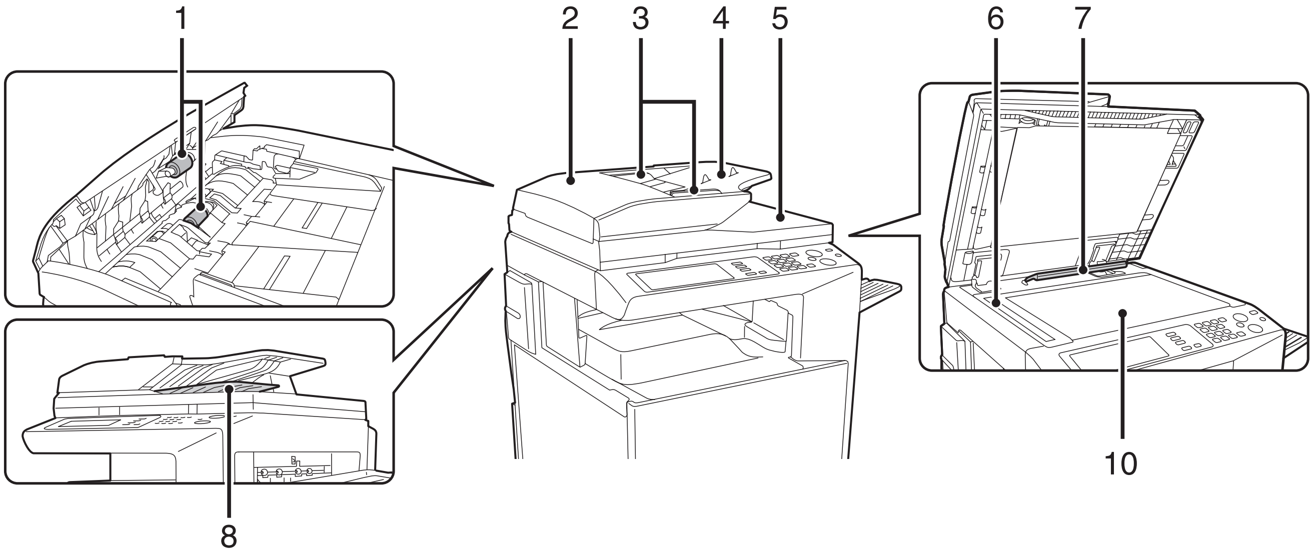
B. Internal structure



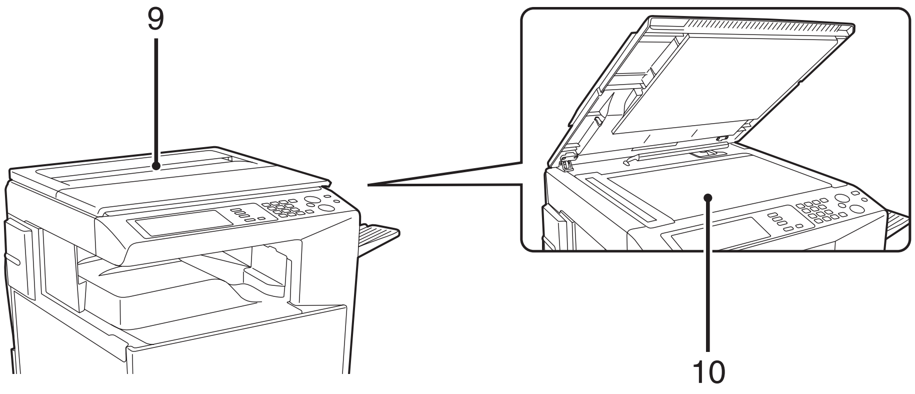
No.	Name	Function/ Operation	Note
1	Toner cartridge	Contains toner. If toner is exhausted, remove the cartridge of exhausted color and replace it with a new one.	
2	Fusing section	Fuses images transferred on paper by heat.	Note: The fusing section is heated to a high temperature. Be careful not to burn when paper jam.
3	Transfer belt	In full color copy, the transfer belt overlaps 4-color toner images on the transfer belt. In black copy, black toner images are shifted to the transfer belt.	Do not touch or scratch. It may cause degraded images.
4	Right side cover	This cover is opened to operate the fusing section pressure adjustment lever or to remove a paper jam.	
5	Paper reverse section cover	Used to reverse paper in duplex print or to remove a paper jam.	
6	Manual feed tray	In manual paper feed, paper is inserted from this tray. When paper greater than A4R or 8-1/2” x 11” R, be sure to pull out the auxiliary tray.	
7	Main power switch	Turns on the power of the machine. When FAX or internet is used, keep it ON.	The main power lamp may remain ON for about 1 minute after turning OFF the main power switch. (When the main power is turned OFF in the nighttime FAX mode and OFF mode or when the power outlet is disconnected. (This is because the amount of electric charges is great when only the resident power is supplied.))
8	Waste toner box	Receives waste toner when copying or printing.	The waste toner box is collected by the servicemen.
9	Waste toner box release button	Press this button to release lock of the waste toner box when replacing the waste toner box or cleaning the wiring unit.	
10	Handle	Used to lift the machine for transit.	
11	2-stage paper feed desk right side cover (When the 2-stage paper feed desk is installed)	Open this cover to remove a paper jam in the tray 3 or 4.	
12	Paper feed tray right side cover	Open this cover to remove a paper jam in the tray 1 or 2.	
13	Right side cover open lever	Lift this lever and open the right side cover to remove a paper jam.	

C. Auto document feeder and document cover

- **Auto document feeder**

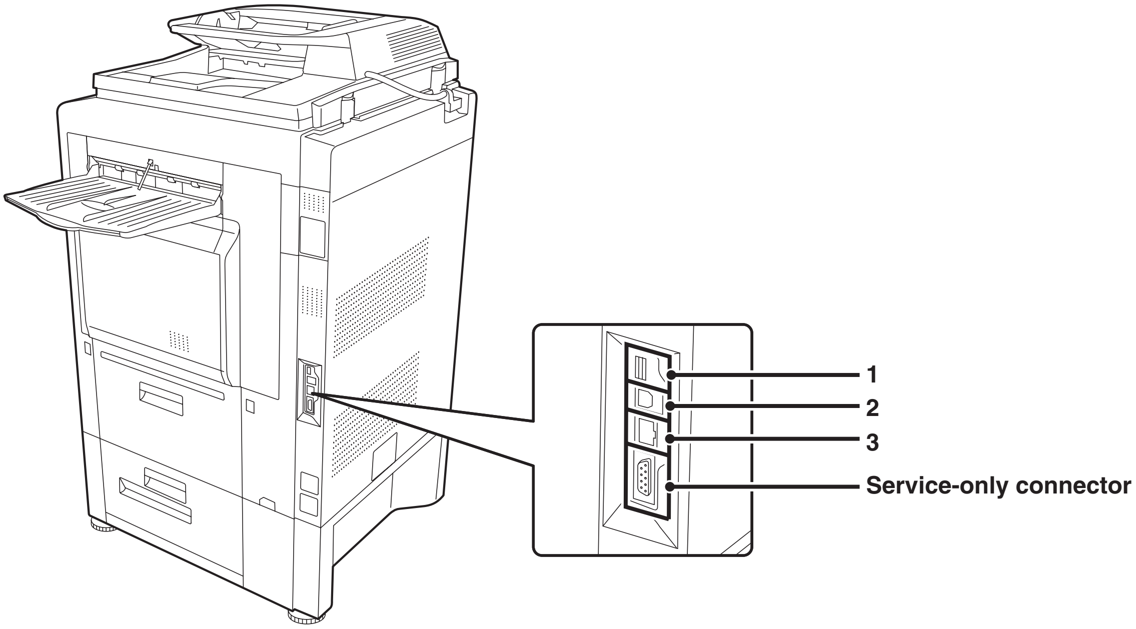


- **Document cover**



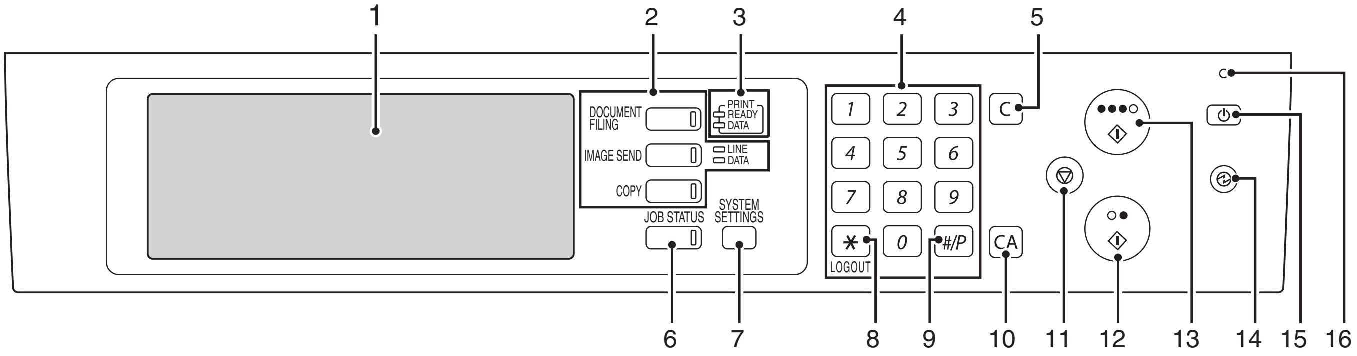
No.	Name	Function/ Operation	Note
1	Document feed roller	Transports a document automatically.	
2	Document feed section cover	This cover is opened when removing a paper jam or cleaning the document feed roller.	
3	Document guide	Guides to scan a document properly. Set to the set document size.	
4	Document set table	A document is set on this table. In the case of a single-surface document, set it face up.	
5	Document exit section	The scanned document is discharged to this section.	
6	Document scan section	The document set on the document set table is scanned in this section.	
7	Document size detection plate	Detects the size of a document set on the document table (glass surface).	
8	Document reverse tray	When scanning a document, it is temporarily discharged to this section to be reversed for scanning the back surface.	
9	Document stocker	Stores documents.	
10	Document table (Glass surface)	Used for thick documents or book documents which cannot be entered to the auto document feeder.	

D. Connectors



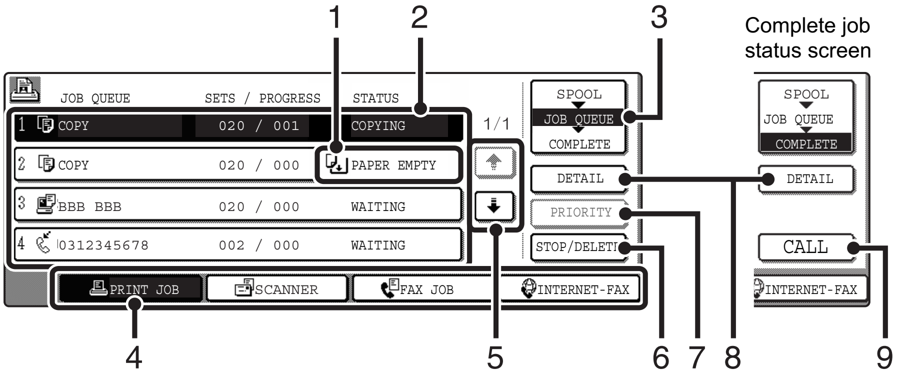
No.	Name	Function/ Operation	Note
1	USB connector (Type A)	Used to connect a USB hub or USB memory.	
2	USB connector (Type B)	Used to connect a computer to use this machine as a printer.	
3	LAN connector	Used to connect a LAN cable to use this machine in a network.	

E. Operation panel



No.	Name	Function/ Operation	Note
1	Touch panel	A message or a key is displayed on the LCD screen. Touch the displayed key with your finger to perform various operations. When the displayed key is touched, a sound is generated and the selected item is highlighted to confirm.	
2	Mode select key/Lamp	Used to switch the display mode of the touch panel. The lamp of the selected key is lighted. • [Document Filing] key Press this key to switch to the document filing mode in order to store a document to the hard disk in the form of a image or to print or send the image stored in the hard disk. • [FAX/Image send] key ([Image send] key for the models without the FAX function) Press this key to switch to the FAX mode/network scanner in order to use the FAX function or the scanner function. • Communicating lamp This lamp is lighted during sending or receiving in the FAX mode, and lighted during sending in the scanner mode. • Data lamp This lamp flashes when FAX data cannot be outputted due to paper empty, etc. If there is data which has not been sent, the lamp is lighted. • [COPY] key Press this key to switch to the copy mode in order to use the copy function. When this key is pressed continuously, the total copy quantity and the toner remaining quantity can be checked.	
3	Printer lamp (Ready lamp/Data lamp)	• Ready lamp When this lamp is lighted, print data can be received. • Data lamp This lamp flashes during reception of print data, and lights up during printing.	
4	Numeric key (10-key)	Used to enter the copy quantity or the FAX number, etc.	
5	[C] key	Used to clear the set value of copy quantity, etc. to “0.”	
6	[Job status] key	Press this key to display the job status. On the job status screen, the details of the job can be checked and the job can be terminated.	
7	[System setting] key	When this key is pressed, the system setting menu screen is displayed to allow the paper feed tray setting, destination registration, and other setting for easy operations of this machine.	
8	[Logout/Tone] key ([Logout] key for the models without the FAX function)	Used to logout after user authentication. Used to deliver the tone signal in the dial line when the FAX function is used.	
9	[Program] key	Used to use the job program when the copy function is used, and to dial when the FAX function is used.	
10	[CA] key	Press this key to reset the operation, cancel setting, and start from the initial state.	
11	[STOP] key	Used to stop copying and scanning a document.	
12	[BLACK START] key	Used to scan a document in black.	
13	[COLOR START] key	Used to make a color copy in the copy mode and to scan a document in colors. When the FAX or the internet FAX is used, this key cannot be used.	
14	[Power save] key/Lamp	Used to set the machine to the auto power shut off mode of power saving. [Power save] key flashes in the auto power shut off mode.	
15	[Power] key	Turns ON/OFF the power of the machine. Used in the FAX nighttime mode when the FAX is installed.	
16	Main power lamp	This lamp lights up when the main power switch of the machine is ON.	

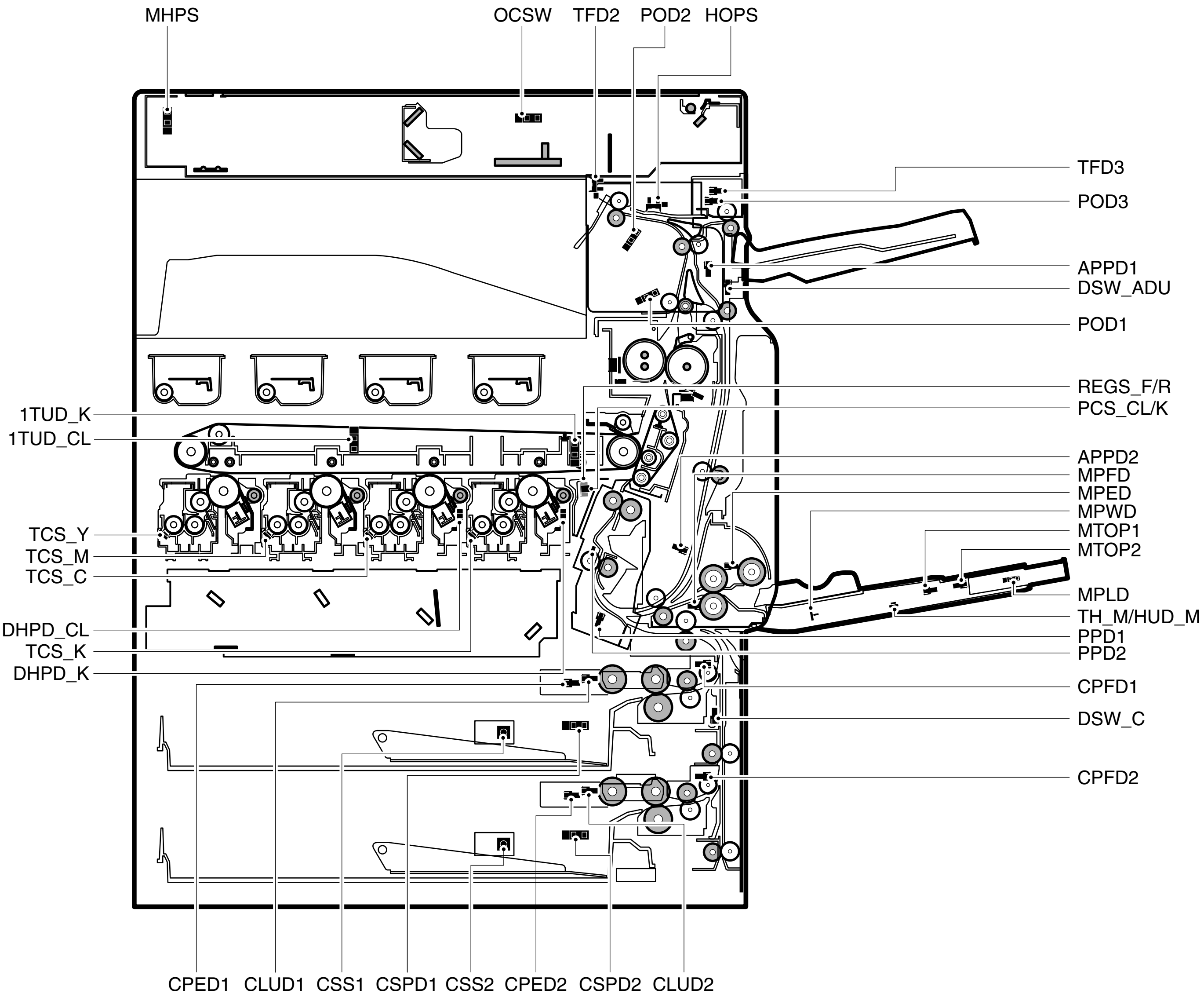
F. Print and send status (Job status)



JOB QUEUE	SETS / PROGRESS	STATUS
1 COPY	020 / 001	COPYING
2 COPY	020 / 000	PAPER EMPTY
3 BBB BBB	020 / 000	WAITING
4 0312345678	002 / 000	WAITING

No.	Name	Function/ Operation	Note
1	Paper empty display	Supply paper. If the status display indicates “Paper empty,” the specified size paper is empty. In this case, if paper is not supplied, the output is reserved and the job data in standby state which can be outputted are outputted in priority. (When, however, paper is exhausted during outputting, the priority output of another job data is not made.) To select another paper size for outputting because the specified size paper cannot be supplied immediately, touch the key of the job in the job list and touch “8. [DETAIL] key,” and the paper size specification can be changed.	
2	Job list	• The list of jobs reserved, during execution, or completed is displayed. When [PRINT] key is touched with the mode select key, the display of the job status screen select key is changed over to display the list of “SPOOL”. The list indicates the jog outline and the status. • When a print job during spooling or an encrypted PDF is directly printed, the job is displayed on the “SPOOL” screen. If there is a list of encrypted PDF files, touch the job key and enter the password, and the selected job is shifted to the list of [Reserve/ Executing], and the job enters the standby state.	
3	Job status screen select key	The job list display is switched to one of “SPOOL” job, “JOB QUEUE” job, or “COMPLETE” job. “SPOOL”: When an encrypted PDF is printed directly, the print job list is displayed. Can be displayed when the print job is displayed. “JOB QUEUE”: The job list which is reserved or executing is displayed. “COMPLETE”: The job list which completed is displayed.	
4	Mode select key	Used to select the print mode, the scanner mode, the Fax mode, or the internet FAX mode. • [PRINT JOB] key displays the list of copy, printer, Fax receive, internet Fax receive, and the self print. • [SCANNER] key displays the send list of the scanner function. • [FAX JOB] key displays the send list of the Fax and the PC-Fax functions. • [INTERNET FAX] key displays the send list of the internet Fax and the PC-Internet Fax function.	
5	[↓] [↑] keys	Selects the page of the displayed job list.	
6	[STOP/DELETE] key	Used to stop or delete the job which is executing or to delete a selected or reserved job. However, the FAX receive print jog and the internet Fax receive print job cannot be stopped or deleted.	
7	[PRIORITY] key	When a job is selected in the reserved jobs displayed in the job list of “JOB QUEUE” screen and the key is touched, the job reservation priority is changed to the top priority. For a print job, select a priority job and touch this key, and the previous copying or printing is interrupted and the selected job copy or print is started. After completion of the selected job, the interrupted job is resumed from the interrupted point.	
8	[DETAIL] key	Used to display the details of the selected job. When the automatic temporal save of the document filing function or filing is executed, or when sequential broadcasting send is executed with the FAX/image send function, the key display is made in the complete job status screen. When this key is touched, the details of the completed jobs are displayed and reprint or resend of the job can be executed by touching [CALL] key.	
9	[CALL] key	When the displayed key is touched on the complete job status screen and [CALL] key is touched, the operation (reprint or resend) of the touched job is executed. Same as when [DETAIL] key is touched and [CALL] key is touched.	

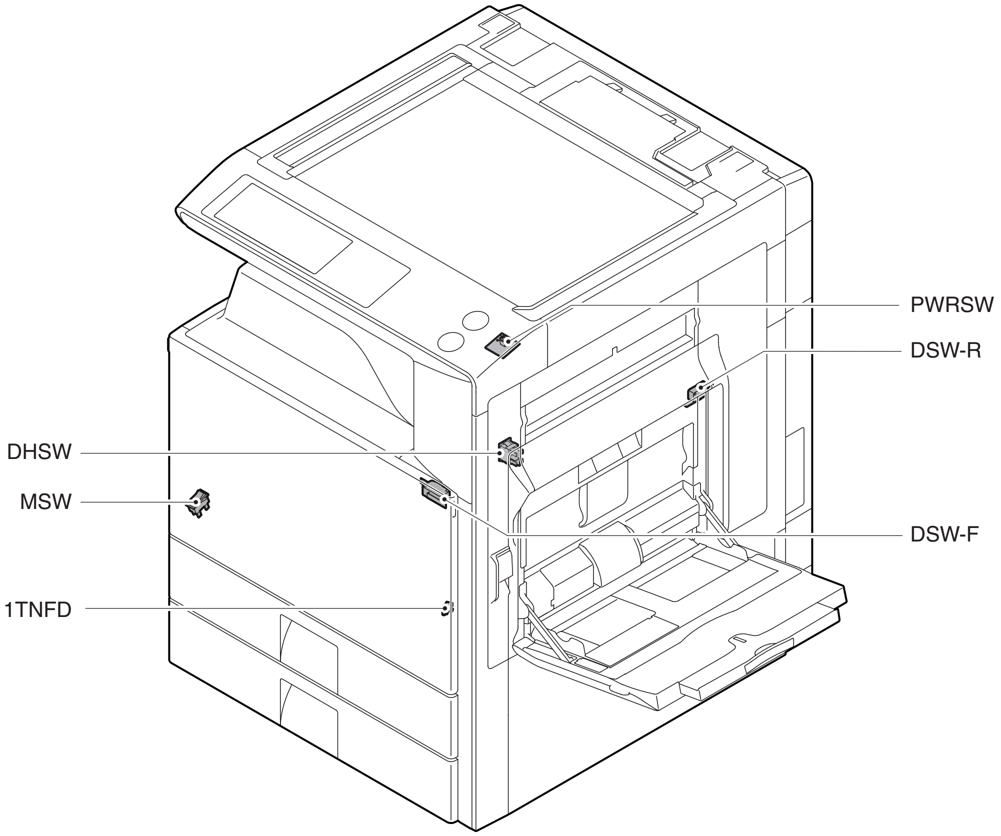
G. Sensors


MHPS
OCSW
TFD2
POD2
HOPS
TFD3
POD3
APPD1
DSW_ADU
POD1
REGS_F/R
PCS_CL/K
1TUD_K
1TUD_CL
APPD2
MPFD
MPED
MPWD
MTOP1
MTOP2
TCS_Y
TCS_M
TCS_C
MPLD
TH_M/HUD_M
DHPD_CL
PPD1
TCS_K
PPD2
DHPD_K
CPFD1
DSW_C
CPFD2
CPED1
CLUD1
CSS1
CSPD1
CSS2
CPED2
CSPD2
CLUD2

Signal name	Name	Function/Operation	Type	NOTE
1TUD_CL	Transfer belt separation CL detection	Detects the transfer belt separation CL.		
1TUD_K	Transfer belt separation BK detection	Detects the transfer belt separation BK.		
APPD1	ADU transport path detection 1	Detects the duplex (ADU) upstream paper pass.	Transmission type	
APPD2	ADU transport path detection 2	Detects the duplex (ADU) midstream paper pass.	Transmission type	
CLUD1	Tray 1 upper limit detection (Lift HP detection)	Detects tray 1 upper limit.	Transmission type	
CLUD2	Tray 2 upper limit detection (Lift HP detection)	Detects tray 2 upper limit.	Transmission type	
CPED1	Tray 1 paper empty detection	Detects tray 1 paper empty.	Transmission type	
CPED2	Tray 2 paper empty detection	Detects tray 2 paper empty.	Transmission type	
CPFD1	Tray 1 transport detection (Paper entry detection)	Detects tray 1 paper pass.	Transmission type	
CPFD2	Tray 2 transport detection (Paper entry detection)	Detects tray 2 paper pass.	Transmission type	
CSPD1	Tray 1 paper remaining quantity detection	Detects tray 1 paper remaining quantity.		
CSPD2	Tray 2 paper remaining quantity detection	Detects tray 2 paper remaining quantity.		
CSS1	Tray 1 installation detection	Detects the tray 1.		
CSS2	Tray 2 installation detection	Detects the tray 2.		
DHPD_CL	CL phase detection	Detects the CL phase.		
DHPD_K	BK phase detection	Detects the BK phase.		
DSW_ADU	ADU transport open/close detection	Detects the duplex (ADU) cover open/close.	Transmission type	
DSW_C	Tray 1 and 2 transport cover open/close detection	Detects the tray 1 and 2 transport cover open/close.		
HOPS	Shifter home position detection	Detects the shifter home position.		
MHPS	Scanner home position sensor	Detects the scanner home position.	Transmission type	
MPED	Manual feed paper empty detection	Detects the manual feed paper empty.	Transmission type	

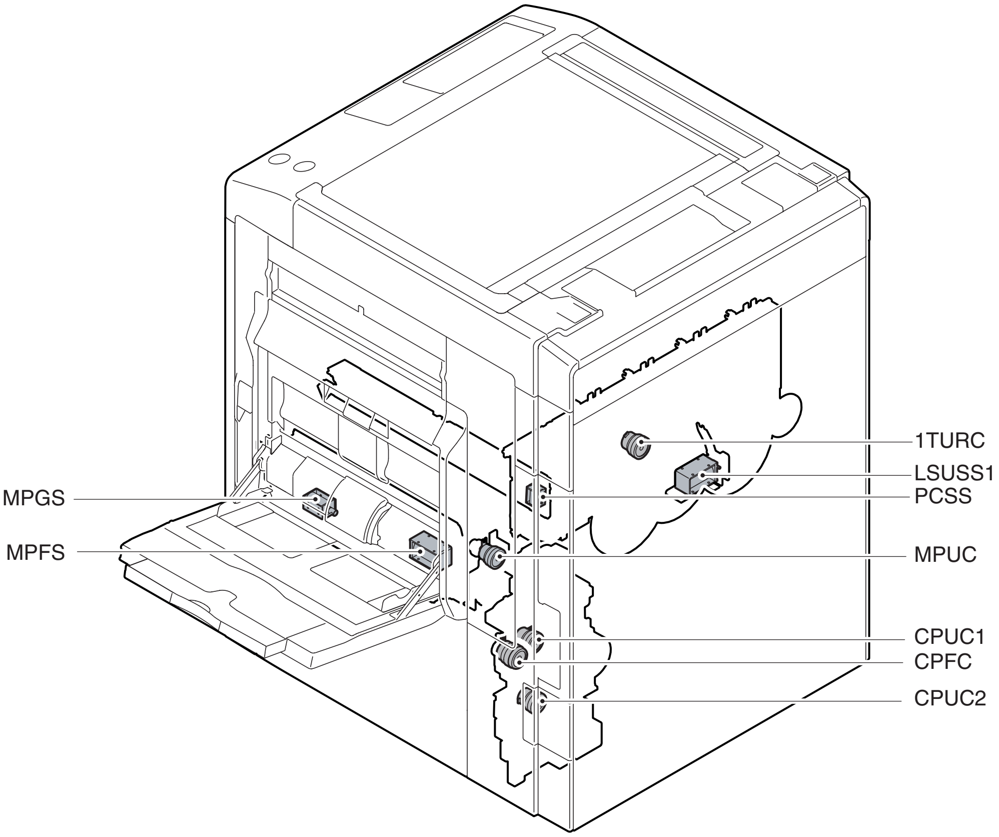
Signal name	Name	Function/Operation	Type	NOTE
MPFD	Manual feed paper entry detection	Detects the manual feed paper entry.	Transmission type	
MPLD	Manual feed paper length detector	Detects the manual paper feed tray paper length.		Manual paper feed unit
MPWD	Manual paper feed tray paper width detector	Detects the manual paper feed tray paper width.	Volume resistor	
MTOP1	Manual paper feed tray pull-out position detector 1	Detects the manual paper feed tray paper pull-out position (storing position).	Transmission type	Manual paper feed unit
MTOP2	Manual paper feed tray pull-out position detector 1	Detects the manual paper feed tray paper pull-out position (pull-out position).	Transmission type	Manual paper feed unit
OCSW	Original cover SW	Document size detection trigger.	Transmission type	
PCS_CL/K	Process control sensor	Detects the toner patch density.	Reflection type	
POD1	Fusing after-detection	Detects the paper exit from fusing.	Transmission type	
POD2	Paper exit detection	Detects the paper from paper exit.	Transmission type	
POD3	Right tray paper exit detection	Detects the paper exit to right tray.		
PPD1	Registration pre-detection	Detects the paper in front of resist roller.	Transmission type	
PPD2	Registration detection	Detects the paper in rear of resist roller.		
REGS_F/R	Resist sensor	Detects the resist shift.	Reflection type	
TCS_C	Toner density sensor	Detects the toner density (C).	Magnetic sensor	
TCS_K	Toner density sensor	Detects the toner density (K).	Magnetic sensor	
TCS_M	Toner density sensor	Detects the toner density (M).	Magnetic sensor	
TCS_Y	Toner density sensor	Detects the toner density (Y).	Magnetic sensor	
TFD2	Paper exit full detection	Detects the face down paper exit tray full	Transmission type	
TFD3	Right tray paper exit full detection	Detects the right tray paper exit full.		
TH_M/HUD_M	Temperature/humidity detection	Detects the temperature/humidity.		

H. Switches



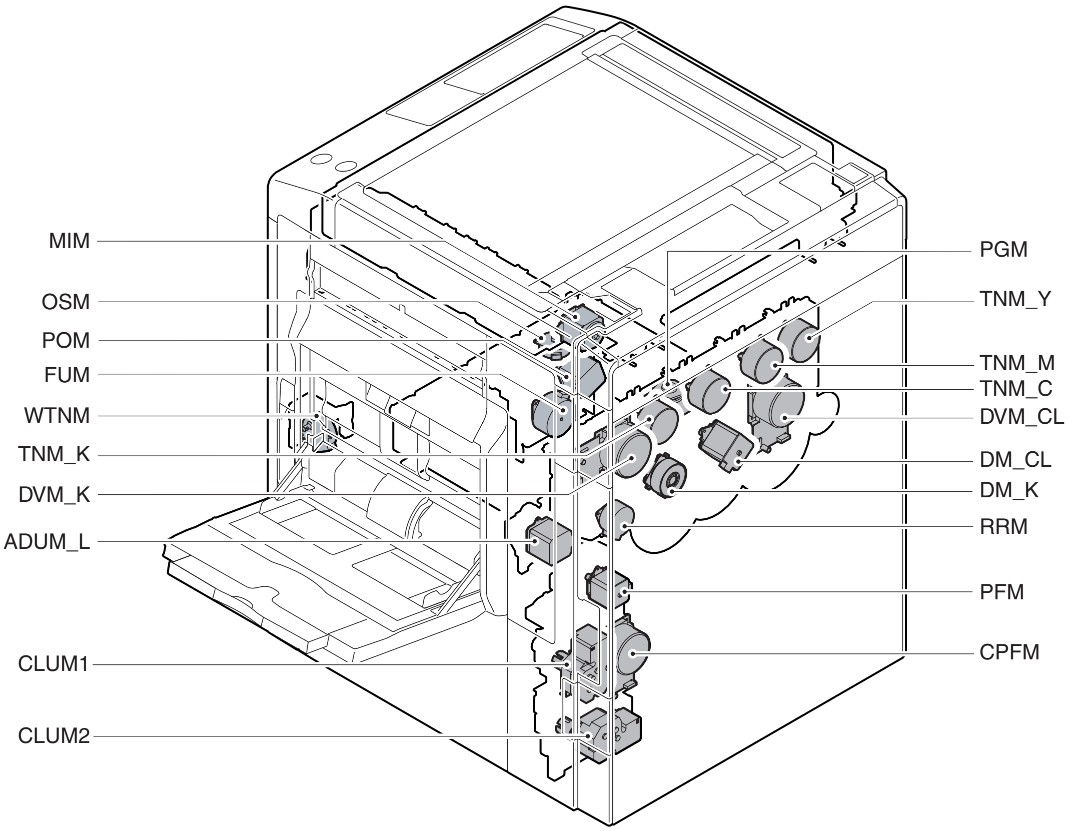
Signal name	Name	Type	Function/Operation	Note
1TNFD	Waste toner full detection switch	Mechanical switch	Detects the waste toner full.	
DHSW (Japan only)	Dehumidifier heater switch	Seesaw switch	Turns ON/OFF the power lone of the dehumidifier heaters provided in the scanner (reading) section and the paper feed section.	
DSW-F	Front door open/close switch	Micro switch	Detects open/close of the front door, and turns ON/OFF the power line of the fusing motor and the LSU laser.	
DSW-R	Right door open/close switch	Micro switch	Detects open/close of the right door, and turns ON/OFF the power line of the fusing motor and the LSU laser.	
MSW	Main SW	Seesaw switch	Turns ON/OFF the main DC power source.	
PWRSW	Operation panel power switch	Push switch	Outputs the ON/OF control signal of the DC power source.	

I. Clutches and solenoids



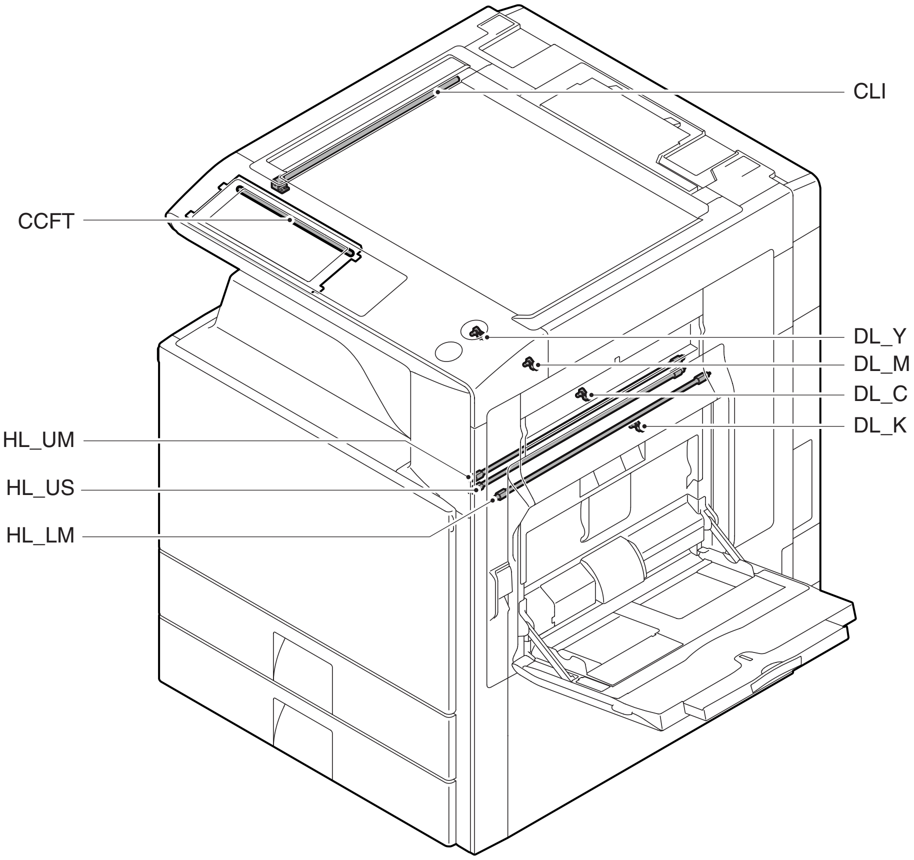
Signal name	Name	Type	Function/Operation	Note
1TURC	Primary transfer separation clutch	Electromagnetic clutch	Controls the primary transfer separation mode.	
CPFC	Tray vertical transport clutch	Electromagnetic clutch	Controls ON/OFF of the paper transport roller in the paper feed tray section.	
CPUC1	Paper feed clutch (Paper feed tray 1)	Electromagnetic clutch	Controls ON/OFF of the roller in the paper feed tray 1 section.	
CPUC2	Paper feed clutch (Paper feed tray 2)	Electromagnetic clutch	Controls ON/OFF of the roller in the paper feed tray 2 section.	
LSUSS1	LSU shutter solenoid	Electromagnetic solenoid	Opens/closes the LSU shutter.	
MPFS	Paper pickup solenoid (Manual paper feed)	Electromagnetic solenoid	Paper pickup solenoid (Manual paper feed)	
MPGS	Manual paper feed gate solenoid	Electromagnetic solenoid	Controls open/close of the manual paper feed gate solenoid.	
MPUC	Manual paper feed clutch	Electromagnetic clutch	Controls ON/OFF of the manual paper feed roller in the manual paper feed section.	
PCSS	Process control shutter solenoid	Electromagnetic solenoid	Opens/closes the shutter of the process control and the registration sensor.	

J. Drive motors



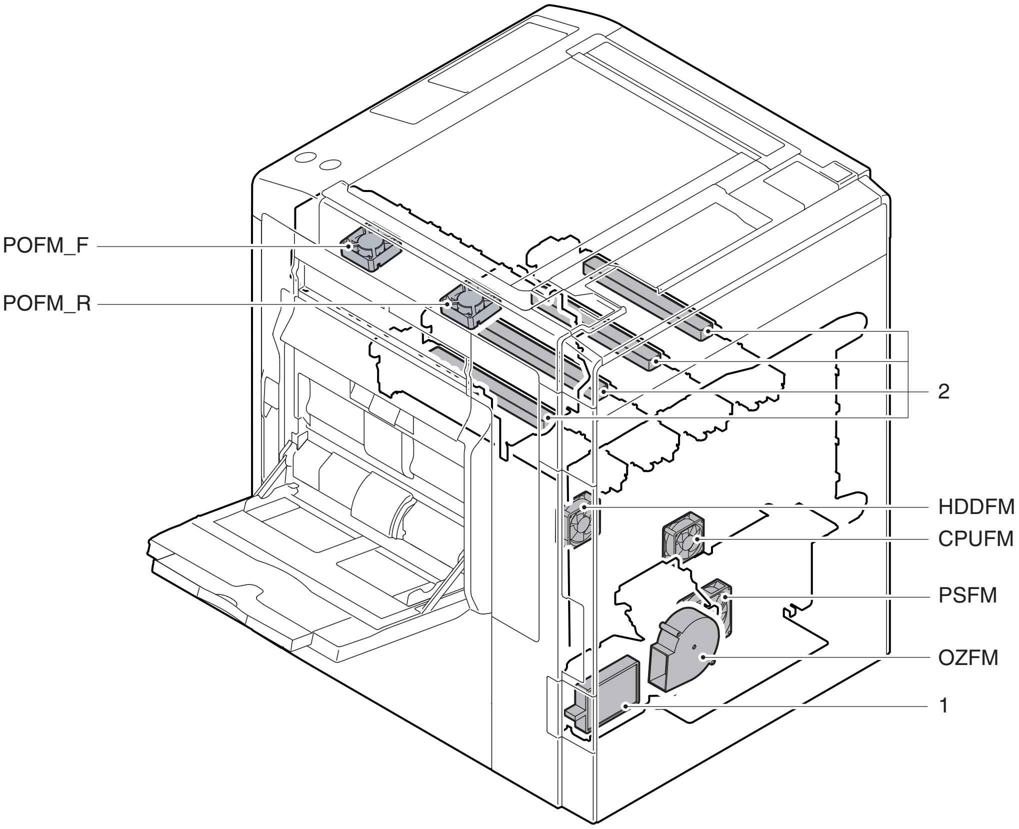
Signal name	Name	Type	Function/Operation	Note
ADUM_L	ADU motor lower	Stepping motor	Drives the right door section.	
CLUM1	Paper tray lift-up motor (Paper feed tray 1)	DC brush-less motor	Drives the lift plate of the paper feed tray.	
CLUM2	Paper tray lift-up motor (Paper feed tray 2)	DC brush-less motor	Drives the lift plate of the paper feed tray.	
CPFM	Paper feed motor	Brush-less motor	Drives the paper feed section.	
DM_CL	Drum motor (CL)	Stepping motor	Drives the color OPC drum unit.	
DM_K	Drum motor (K)	Stepping motor	Drives the black OPC drum unit.	
DVM_CL	Developing drive motor (CL)	Brush-less motor	Drives the developing section (CL).	
DVM_K	Developing drive motor (K)	Brush-less motor	Drives the developing section/transfer section (K).	
FUM	Fusing drive motor	Stepping motor	Drives the fusing unit.	
MIM	Scanner motor	Stepping motor	Drives the scanner (reading) section.	
OSM	Shifter motor	Stepping motor	Performs offset of paper.	
PFM	PS front motor	Stepping motor	Drives transport between the resist roller and the paper feed section, transport between the resist roller and the right door section.	
PGM	Polygon motor	DC brushless motor	Scans the laser beam	
POM	Paper exit drive motor	Stepping motor	Drives the paper exit roller.	
RRM	Registration motor	Stepping motor	Drives the resist roller and controls ON/OFF.	
TNM_C	Toner motor C	Synchronous motor	Transports toner from the toner cartridge to the developing unit.	
TNM_K	Toner motor K	Synchronous motor	Transports toner from the toner cartridge to the developing unit.	
TNM_M	Toner motor M	Synchronous motor	Transports toner from the toner cartridge to the developing unit.	
TNM_Y	Toner motor Y	Synchronous motor	Transports toner from the toner cartridge to the developing unit.	
WTNM	Waste toner drive motor	Synchronous motor	Stirs waste toner.	

K. Lamps



Signal name	Name	Type	Function/Operation	Note
CCFT	LCD backlight	CCFT cool cathode ray tube	Backlight for the CCD	
CLI	Scanner lamp	Xenon lamp	Radiates lights onto a document for the CCD to scan document images.	
DL_C	Discharge lamp C	LED	Discharges electric charges on the OPC drum.	
DL_K	Discharge lamp K	LED	Discharges electric charges on the OPC drum.	
DL_M	Discharge lamp M	LED	Discharges electric charges on the OPC drum.	
DL_Y	Discharge lamp Y	LED	Discharges electric charges on the OPC drum.	
HL_LM	Heater lamp lower main		Heats the lower heat roller. (Main)	
HL_UM	Heater lamp upper main		Heats the upper heat roller. (Main)	
HL_US	Heater lamp upper sub		Heats the upper heat roller. (Sub)	

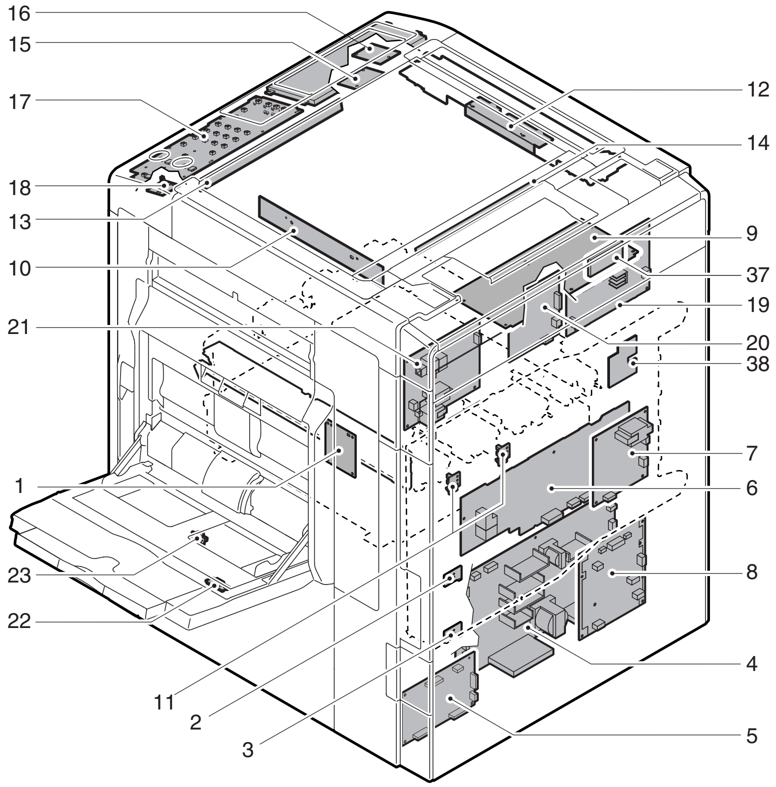
L. Fans and filters

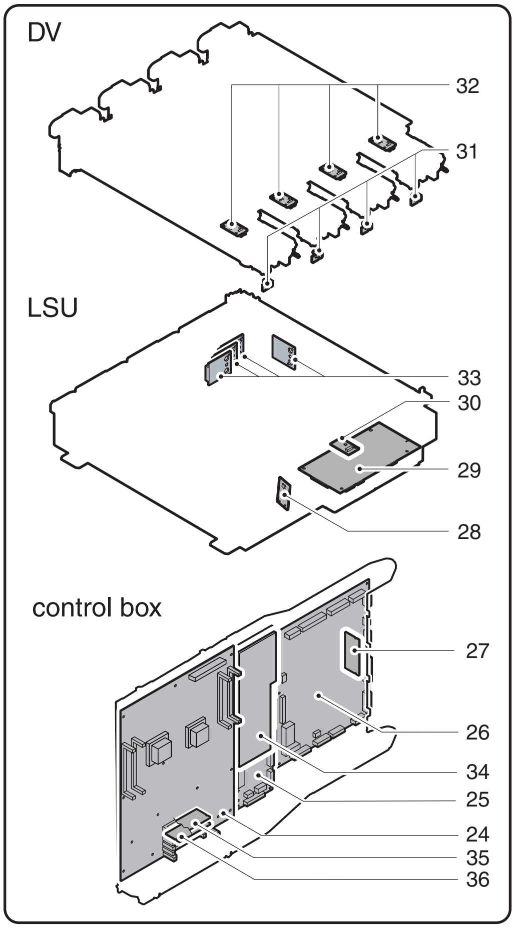


Signal name	Name	Function/Operation	Note
CPUFM	Controller cooling fan motor	Cools the controller PWB.	
HDDFM	HDD cooling fan motor	Cools the HDD.	
OZFM	Ozone fan motor	Exhausts ozone.	
POFM_F	Paper exit cooling fan motor (F side)	Cools the fusing unit.	
POFM_R	Paper exit cooling fan motor (R side)	Cools the fusing unit.	
PSFM	Power cooling fan motor	Cools the power unit.	

No.	Name	Function/Operation	Note
1	Ozone filter	Absorbs ozone generated in the image process section.	
2	Toner filter	Prevents dispersing of toner.	

M. PWB

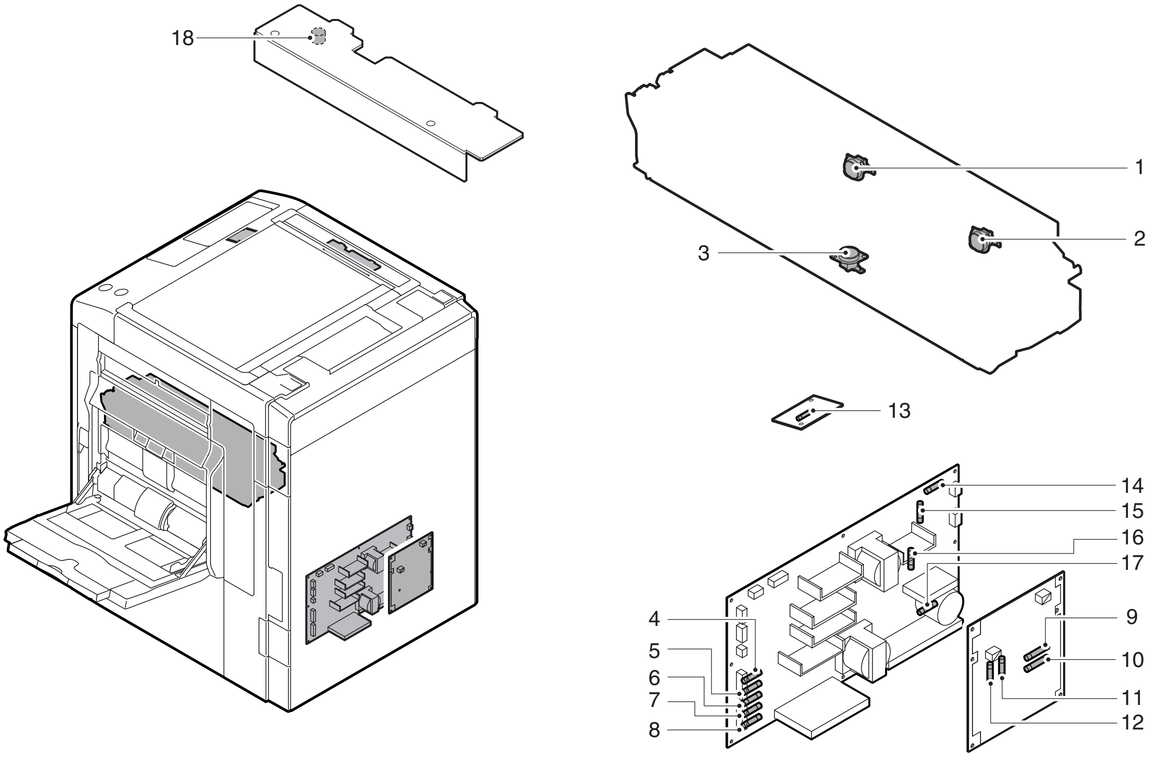




No.	Name	Function/Operation	Note
1	RD I/F PWB	Detects the sensors in the right door unit.	
2	Tray 1 detection PWB	Detects the tray 1.	
3	Tray 2 detection PWB	Detects the tray 2.	
4	DC power PWB	Outputs the secondary side voltage.	
5	Driver main PWB	Drives the transport motor and related sections.	
6	MC PWB	Generates the high voltage for the main charger and the developing bias voltage.	
7	Primary transfer PWB	Generates the primary transfer voltage.	
8	AC power PWB	Controls the primary side power source.	
9	Scanner control PWB	Controls the scanner section.	
10	CCD PWB	Scans the document images.	
11	Phase detection PWB	Adjusts the BL/CL drum phase.	
12	CL inverter PWB	Drives the xenon lamp.	
13	Document detection light receiving PWB	Outputs the document size detection signal.	
14	Document detection light emitting PWB	Emits the document size detection LED lights.	
15	LCD INV PWB	Generates the high voltage for the LCD backlight.	
16	LVDS PWB	Converts the display signal and outputs to the LCD.	
17	MFP OPE-P PWB	Outputs the key operation signal.	
18	Power SW PWB	Outputs the ON/OFF control signal of the DC power source.	
19	HL PWB	Controls the heater lamp.	
20	Driver sub PWB	Drives the process motor and related sections.	
21	Secondary transfer PWB	Generates the secondary transfer voltage and the transfer belt cleaning voltage.	
22	Temperature/humidity sensor PWB	Detects the ambient temperature and humidity.	
23	Manual paper feed width detection PWB	Detects the manual paper feed tray paper width.	
24	MFPcnt PWB	Controls images and the whole machine.	
25	Mother PWB	Interfaces the MFPcnt PWB and other PWB.	
26	PCU PWB	Controls the engine section.	
27	PCU Flash ROM PWB	Controls the PCU PWB.	
28	BD PWB	Detects laser and outputs the synchronous signal.	
29	LSU CNT PWB	Controls the LSU.	
30	LSU thermistor	Measures the temperature in the LSU.	
31	DL PWB	Discharges electric charges on the OPC drum.	
32	DV initial PWB	Detects the DV model.	
33	LD PWB	Controls laser lighting.	

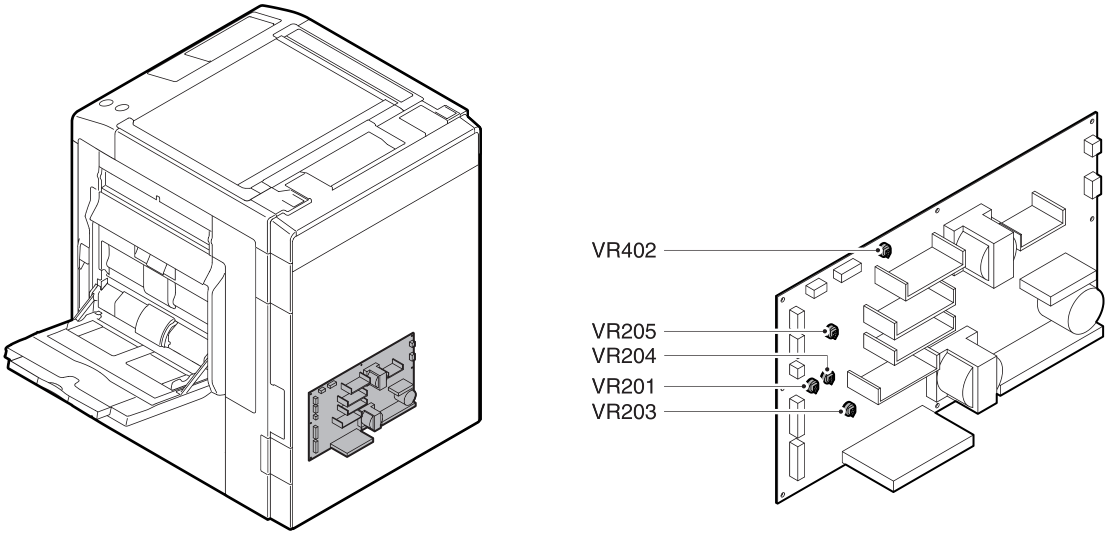
No.	Name	Function/Operation	Note
34	SCAN IN PWB	Rectifies the waveform of scanner image data.	
	DOCC PWB	Recognizes the document control pattern.	Option
35	BOOT ROM PWB	Stores the program to boot the printer controller.	
36	PROGRAM ROM PWB	Stores the program.	
37	SCN Flash ROM PWB	Stores the scanner control program.	
38	HVR PWB	Divides the primary transfer electrode for each color to improve the transfer capability.	

N. Fuses/Thermostats



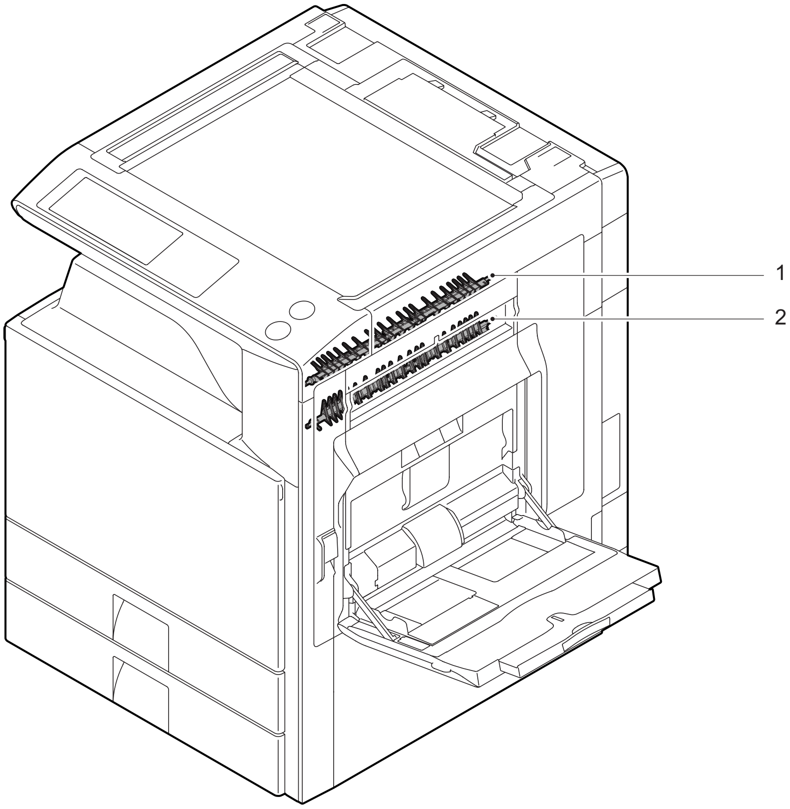
No.	Signal name	Name	Specifications	Section
1	HLTS1	Thermostat	Prevents against overheating of the fusing roller.	Fusing unit
2	HLTS2	Thermostat	Prevents against overheating of the fusing roller.	Fusing unit
3	HLTS3	Thermostat	Prevents against overheating of the fusing roller.	Fusing unit
4	F201	Fuse	T6.3AH250V	DC power PWB
5	F202	Fuse	T6.3AH250V	DC power PWB
6	F203	Fuse	T6.3AH250V	DC power PWB
7	F204	Fuse	T6.3AH250V	DC power PWB
8	F205	Fuse	T6.3AH250V	DC power PWB
9	F1	Fuse	20A 125V	AC power PWB
10	F2	Fuse	20A 125V	AC power PWB
11	F3	Fuse	T2AH250V	AC power PWB
12	F4	Fuse	T2AH250V	AC power PWB
13	F1	Fuse	200mA 250V	LCD INV PWB
14	F101	Fuse	125V 12A	DC power PWB
15	F102	Fuse	T1AH250V	DC power PWB
16	F103	Fuse	T8AH250V	DC power PWB
17	F301	Fuse	T5AH250V	DC power PWB
18	F1	Fuse	1.25A250V	CL invertor PWB

O. Adjustment volumes



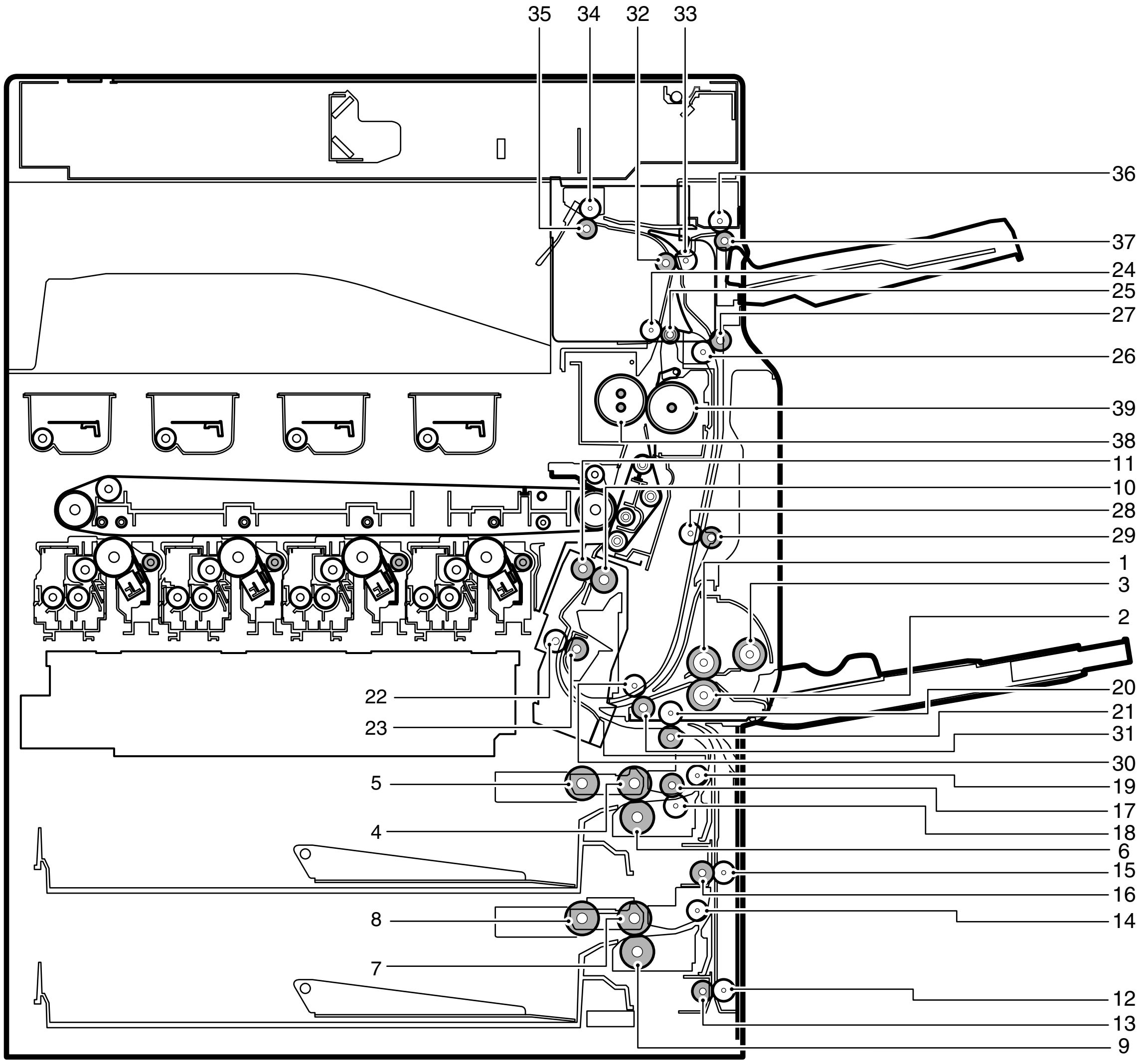
Signal name	Function/ Operation	Section	Note
VR201	+12V output adjustment	DC power PWB	
VR203	+24V output adjustment	DC power PWB	
VR204	+5VN output adjustment	DC power PWB	
VR205	+3.3V output adjustment	DC power PWB	
VR402	+5VO, +5VL output adjustment	DC power PWB	

P. Gate



No.	Name	Function/ Operation	Note
1	ADU reverse gate	Switches the paper route: discharged to the inner tray or discharged to the right tray.	
2	ADU gate lower	Switches the transport route by switchback when paper is transported to the duplex (ADU) section.	

Q. Rollers



No.	Name	Function/ Operation	Note
1	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.	
2	Separation roller (Manual paper feed tray)	Separate paper to prevent against double feed.	
3	Paper pickup roller (Manual paper feed tray)	Feeds paper to the paper feed roller.	
4	Paper feed roller (No. 1 paper feed tray)	Feeds paper to the paper transport section.	
5	Paper pickup roller (No. 1 paper feed tray)	Feeds paper to the paper feed roller.	
6	Separation roller (No. 1 paper feed tray)	Separates paper to prevent against double feed.	
7	Paper feed roller (No. 2 paper feed tray)	Feeds paper to the paper transport section.	
8	Paper pickup roller (No. 2 paper feed tray)	Feeds paper to the paper feed roller.	
9	Separation roller (No. 2 paper feed tray)	Separates paper to prevent against double feed.	
10	Resist roller (Drive)	Transports paper to the transfer section. Controls the paper transport timing to adjust relative relations between images and paper.	
11	Resist roller (Idle)	Applies a pressure to paper and the resist roller to give paper the transport power of the transport roller.	
12	Transport roller 1 (Idle)	Applies a pressure to paper and the resist roller to give paper the transport power of the transport roller.	
13	Transport roller 1 (Drive)	Transports paper from No. 3 and No. 4 paper feed tray to the transport roller 4.	
14	Transport roller 3 (Idle)	Reduces friction between paper and the paper guide.	
15	Transport roller 4 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
16	Transport roller 4 (Drive)	Transports paper from the transport roller 1 and paper feed roller (No. 2 paper feed tray) to the transport roller 7.	
17	Transport roller 5 (Drive)	Transports paper from the paper feed tray 1 to the transport roller 7.	
18	Transport roller 5 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
19	Transport roller 6 (Idle)	Reduces friction between paper and the paper guide.	
20	Transport roller 7 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	

No.	Name	Function/ Operation	Note
21	Transport roller 7 (Drive)	Transports paper from the paper feed tray 1, 2, 3, and 4 to the transport roller 8.	
22	Transport roller 8 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
23	Transport roller 8 (Drive)	Transports paper to the resist roller.	
24	Transport roller 9 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
25	Transport roller 9 (Drive)	Transports paper from the fusing roller to the transport roller 13.	
26	Transport roller 10 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
27	Transport roller 10 (Drive)	Transports paper from the transport roller 13 to the transport roller 11.	
28	Transport roller 11 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
29	Transport roller 11 (Drive)	Transports paper from the transport roller 10 to the transport roller 12.	
30	Transport roller 12 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
31	Transport roller 12 (Drive)	Transports paper from the transport roller 11 to the transport roller 8. / Transports the paper from the manual paper feed tray to the transport roller 8.	
32	Transport roller 13 (Drive)	Transports paper from the transport roller 9 to the transport roller 1. / Transport paper to the duplex (ADU) section.	
33	Transport roller 13 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
34	Paper exit roller 1 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
35	Paper exit roller 1 (Drive)	Discharges paper. Transports paper to the right paper exit tray. Transport paper to the duplex (ADU) section.	
36	Paper exit roller 2 (Idle)	Applies a pressure to paper and the transport roller to give paper the transport power of the transport roller.	
37	Paper exit roller 2 (Drive)	Discharges paper.	
38	Fusing roller (Heating)	Heats toner on paper, and fuses it onto paper.	
39	Fusing roller (Pressing)	Applies a pressure to the fusing roller (heating).	

[6] ADJUSTMENTS

1. General

Each adjustment item in the adjustment item list is associated with a specific Job number. Perform the adjustment procedures in the sequence of Job numbers from the smallest to the greatest.

However, there is no need to perform all the adjustment items. Perform only the necessary adjustments according to the need.

Unnecessary adjustments can be omitted. Even in this case, however, the sequence from the smallest to the greatest Job number must be observed.

If the above precaution should be neglected, the adjustment would not complete normally or trouble may occur.

2. Adjustment item list

Job No.	Adjustment item list			Simulation
ADJ 1	Developing doctor gap adjustment			
ADJ 2	Developing roller main pole position adjustment			
ADJ 3	Toner density reference control level setting			
ADJ 4	High voltage adjustments	ADJ 4A	Main charger grid voltage adjustment	8-2
		ADJ 4B	Developing bias voltage adjustment	8-1
		ADJ 4C	Transfer voltage adjustment	8-6
ADJ 5	Image density sensor, image registration sensor adjustment	ADJ 5A	Color image density sensor calibration	44-13
		ADJ 5B	Color image density sensor, black image density sensor, image registration sensor adjustment	44-2
ADJ 6	Image skew adjustment (LSU unit)			64-1/61-4
ADJ 7	OPC drum phase adjustment	ADJ 7A	OPC drum phase adjustment (Auto adjustment)	50-22
		ADJ 7B	OPC drum phase adjustment (Manual adjustment)	44-31
ADJ 8	Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section)	ADJ 8A	Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) (Manual adjustment)	50-10
ADJ 9	Image off-center adjustment (Print engine section)			50-10
ADJ 10	Image registration adjustment (Print engine section)	ADJ 10A	Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment)	50-22
		ADJ 10B	Image registration adjustment (Main scanning direction) (Manual adjustment)	50-20
		ADJ 10C	Image registration adjustment (Sub scanning direction) (Manual adjustment)	50-21
ADJ 11	Scan image distortion adjustment	ADJ 11A	Scanner (reading) unit parallelism adjustment	
		ADJ 11B	Scan image (sub scanning direction) distortion adjustment	
		ADJ 11C	Scan image (main scanning direction) distortion adjustment	
		ADJ 11D	Scan image distortion adjustment (Whole scanner)	
ADJ 12	Scan image focus adjustment (CCD unit position adjustment)			
ADJ 13	Scan image skew adjustment (RSPF) (Refer to MX-RPX1 SM.)			
ADJ 14	Scan image magnification ratio adjustment (Document table mode)	ADJ 14A	Scan image magnification ratio adjustment (Main scanning direction) (Document table mode)	48-1
		ADJ 14B	Scan image magnification ratio adjustment (Sub scanning direction) (Document table mode)	48-1
ADJ 15	Scan image magnification ratio adjustment (RADF mode) (Refer to the MX-RPX1 SM.)	ADJ 15A	Scan image magnification ratio adjustment (Main scanning direction) (RADF mode) (Refer to the MX-RPX1 SM.)	48-1
		ADJ 15B	Scan image magnification ratio adjustment (Sub scanning direction) (RADF mode) (Refer to the MX-RPX1 SM.)	48-1
ADJ 16	Scan image off-center adjustment	ADJ 16A	Scan image off-center (Document table mode)	50-12
		ADJ 16B	Scan image off-center (RSPF mode) (Refer to the MX-RPX1 SM.)	50-12
ADJ 17	Print area (Void area) adjustment (Print engine section)			50-10/50-1
ADJ 18	Copy image position, image loss adjustment	ADJ 18A	Copy image position, image loss adjustment (Document table mode)	50-1 (50-2)
		ADJ 18B	Copy image position, image loss adjustment (RSPF mode) (Refer to the MX-RPX1 SM.)	50-6 (50-7)
ADJ 19	Print lead edge image position adjustment (Printer mode) (Print engine section)			50-5
ADJ 20	Copy color balance/density adjustment	ADJ 20A	CCD gamma adjustment (CCD calibration) (Normal document copy mode)	63-3 (63-5)
		ADJ 20B	Copy color balance adjustment (Auto adjustment)	46-24
		ADJ 20C	Copy color balance adjustment (Manual adjustment)	46-21
		ADJ 20D	Copy density adjustment (Each color copy mode) (Whole adjustment) (Normally unnecessary to adjust)	46-1
		ADJ 20E	Copy density adjustment (each monochrome copy mode) (Whole adjustment) (Normally unnecessary to adjust)	46-2
		ADJ 20F	Copy color balance adjustment (Color balance adjustment at each density level in each color copy mode) (Normally not required)	46-10
		ADJ 20G	Monochrome copy density adjustment (Density adjustment at each density level in each monochrome copy mode) (Normally not required)	46-16
		ADJ 20H	Gamma/density adjustment in the text image edge section (Normally not required)	46-27

Job No.	Adjustment item list			Simulation
ADJ 20	Copy color balance/density adjustment	ADJ 20I	Copy color balance adjustment (Single color copy mode) (Normally not required)	46-25
		ADJ 20J	Auto color balance adjustment by the user (Copy color balance auto adjustment enable setting and adjustment)	26-53
		ADJ 20K	Background process condition setting in the color auto copy mode	46-33
		ADJ 20L	Color document identification level (ACS operation) setting	46-33
ADJ 21	Printer color balance/density adjustment	ADJ 21A	Printer color balance adjustment (Auto adjustment)	67-24
		ADJ 21B	Printer color balance adjustment (Manual adjustment)	67-25
		ADJ 21C	Auto color balance adjustment by the user (Copy color balance auto adjustment ENABLE setting and adjustment)	26-54
ADJ 22	Fusing paper guide position adjustment			
ADJ 23	Document size sensor adjustment	ADJ 23A	Document size sensor detection point adjustment	41-2
		ADJ 23B	Document size sensor sensitivity adjustment	41-2
ADJ 24	Manual paper feed tray paper size (width) sensor adjustment			40-2
ADJ 25	RSPF tray paper size (width) sensor adjustment (Refer to the MX-RPX1 SM.)			53-7
ADJ 26	Touch panel coordinate setting			65-1
ADJ 27	Image loss, void area, image off-center, image magnification ratio auto adjustment with SIM50-28	ADJ 27A	Print image main scanning direction image magnification ratio automatic adjustment	50-28
		ADJ 27B	Image off-center automatic adjustment	50-28
		ADJ 27C	Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment	50-28
		ADJ 27D	SPF mode image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment	50-28

3. Details of adjustment

1 Developing doctor gap adjustment

This adjustment must be executed in the following cases:

* When the developing unit is disassembled.

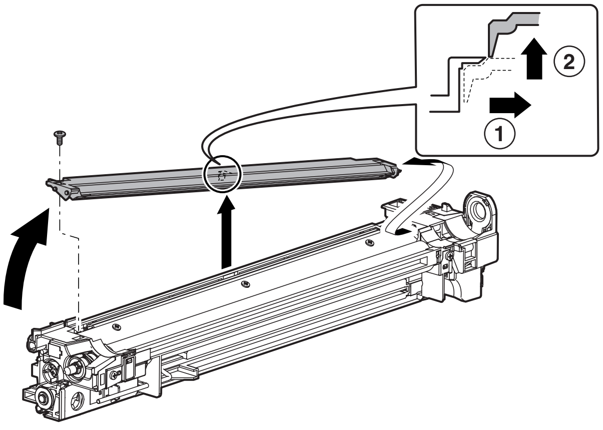
* When the print image density is low.

* When there is a blur on the print image.

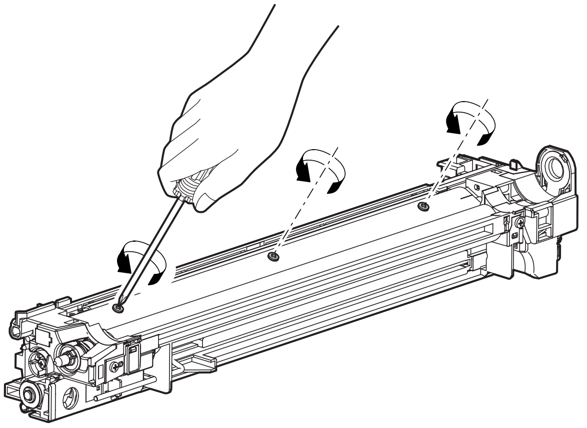
* When there is unevenness in the print image density.

* There is abnormally much toner dispersion.

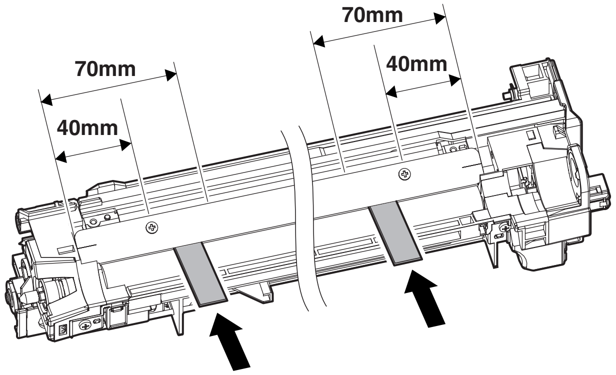
1) Remove the developing unit from the main unit, and remove the developing unit upper cover and the developing doctor cover.



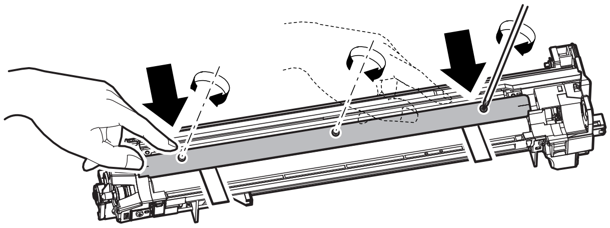
2) Loosen the developing doctor fixing screw.



3) Insert a thickness gauge of 0.35mm between 40mm – 70mm from the edge of the developing doctor.

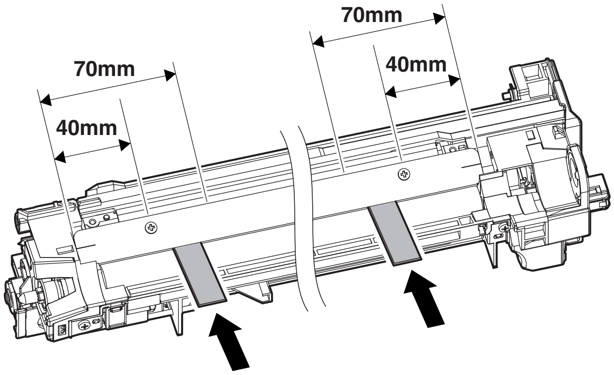


4) Push the developing doctor in the arrow direction, and tighten the fixing screw of the developing doctor. (Perform the similar procedure for the front frame and the rear frame.)



5) Check that the doctor gaps at two positions in 40mm – 70mm from the both sides of the developing doctor are in the range of 0.35 ± 0.03mm.

* When inserting a thickness gauge, be careful not to scratch the developing doctor and the developing roller.



2 Developing roller main pole position adjustment

This adjustment must be executed in the following cases:

* When the developing unit is disassembled.

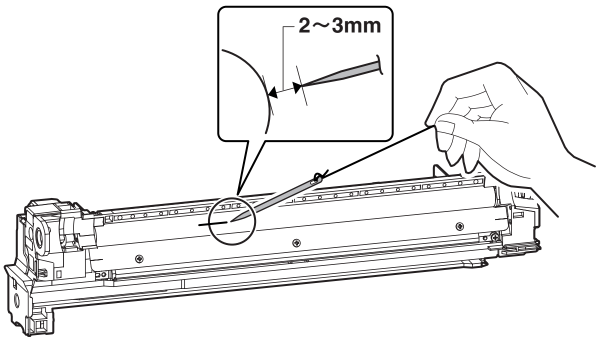
* When the print image density is low.

* When there is a blur on the print image.

* When there is unevenness in the print image density.

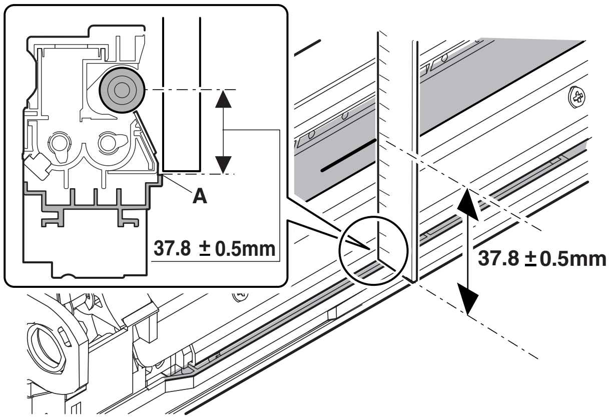
* There is abnormally much toner dispersion.

1) Remove the developing doctor cover, and place the developing unit on a flat surface.
2) Attach a thread to a needle or a pin.
3) Hold the thread and bring the needle near the developing roller. (Do not use a paper clip because it will not provide a correct position.)
4) Mark the developing roller surface on the extension line of the needle with the needle at 2 – 3mm from the developing roller surface. (Never touch the needle tip with the developing roller.)

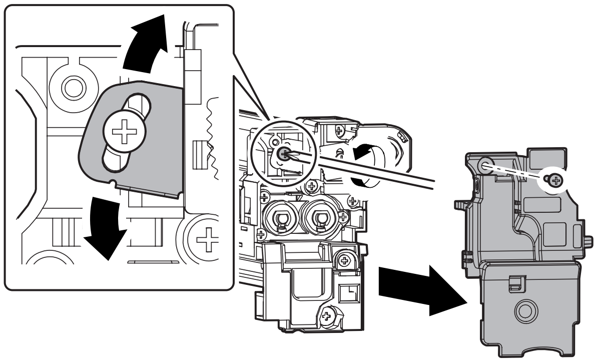


5) Measure the distance between the marking position and position A of the developing unit frame, and check that it is 37.8 ± 0.5mm.

If the distance is not within the above range, adjust the developing roller main pole position in the following procedures.



6) Remove the developing unit front cover, loosen the fixing screw of the developing roller main pole adjustment plate, and move the adjustment plate in the arrow direction to adjust.



Repeat procedures 3) – 6) until the developing roller main pole position comes to the specified range.

7) After completion of the adjustment of the developing roller main pole position, fix the developing roller main pole adjustment plate with the fixing screw.

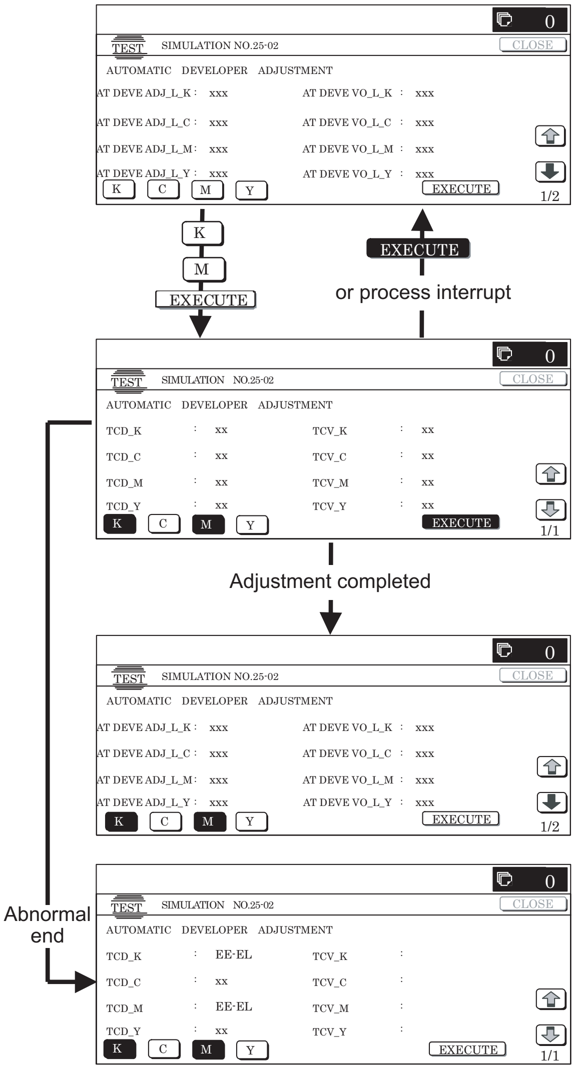
3 Toner density reference control level setting

This adjustment must be executed in the following cases:

* When developer is replaced.

NOTE: Be sure to execute this adjustment only when developer is replaced. Never execute it in the other cases.

1) With the front cabinet open, enter SIM25-2.



TEST SIMULATION NO.25-02 CLOSE
AUTOMATIC DEVELOPER ADJUSTMENT
AT DEVE ADJ_L_K : xxx AT DEVE VO_L_K : xxx
AT DEVE ADJ_L_C : xxx AT DEVE VO_L_C : xxx
AT DEVE ADJ_L_M : xxx AT DEVE VO_L_M : xxx
AT DEVE ADJ_L_Y : xxx AT DEVE VO_L_Y : xxx
K C M Y EXECUTE 1/2

TEST SIMULATION NO.25-02 CLOSE
AUTOMATIC DEVELOPER ADJUSTMENT
TCD_K : xx TCV_K : xx
TCD_C : xx TCV_C : xx
TCD_M : xx TCV_M : xx
TCD_Y : xx TCV_Y : xx
K C M Y EXECUTE 1/1

TEST SIMULATION NO.25-02 CLOSE
AUTOMATIC DEVELOPER ADJUSTMENT
AT DEVE ADJ_L_K : xxx AT DEVE VO_L_K : xxx
AT DEVE ADJ_L_C : xxx AT DEVE VO_L_C : xxx
AT DEVE ADJ_L_M : xxx AT DEVE VO_L_M : xxx
AT DEVE ADJ_L_Y : xxx AT DEVE VO_L_Y : xxx
K C M Y EXECUTE 1/2

TEST SIMULATION NO.25-02 CLOSE
AUTOMATIC DEVELOPER ADJUSTMENT
TCD_K : EE-EL TCV_K :
TCD_C : xx TCV_C :
TCD_M : EE-EL TCV_M :
TCD_Y : xx TCV_Y :
K C M Y EXECUTE 1/1

2) Close the front cabinet.

3) Select a developing unit to be adjusted.

4) When [EXECUTE] key it pressed, it is highlighted. The developing roller rotates, and the toner sensor detects toner density, and the output value is displayed.

The above operation is executed for 3 minutes, and the average value of the toner density sensor detection level is set (saved) as the reference toner density control value.

When the reference toner density control adjustment operation is completed, [EXECUTE] key display return, to normal from highlight. This makes you know whether the adjustment operation is completed or not.

The above operation is executed each of the lower speed mode and the middle speed mode, and the reference toner density control value is set for each of them.

NOTE: If the operation is interrupted within 3 minutes, the adjustment result is not reflected (enabled).

When [EXECUTE] key is pressed during rotation, the operation is stopped and [EXECUTE] key returns to the normal display.

If [EE-EU], [EE-EL], or [EE-EG] is displayed, setting of the reference toner density control value is not completed normally.

Error display	Error name	Detail of error
EE-EL	EL abnormality	Sensor output level, 1.5V or below; control voltage, 8.0V or above
EE-EU	EU abnormality	Sensor output level, 3.45V or above; control voltage, 2.0V or below
EE-EC	EC abnormality	Sensor output level, other than 2.5V ± 0.2V

5) Use SIM24-5 to clear the developer counter.

6) Use SIM44-27 to clear the half-tone correction data.

NOTE:

a) When replacing developer, always replace all the three colors of Yellow, Magenta, and Cyan.

If only one color is replaced, color balance may be adversely affected. Black developer can be replaced individually.

b) After replacement of developer or the photoconductor, be sure to execute SIM44-27 to clear the half-tone correction data.

If the above procedure is neglected, the half-tone correction may not be performed correctly.

4 High voltage adjustments

4-A Main charger grid voltage adjustment

This adjustment must be executed in the following cases:

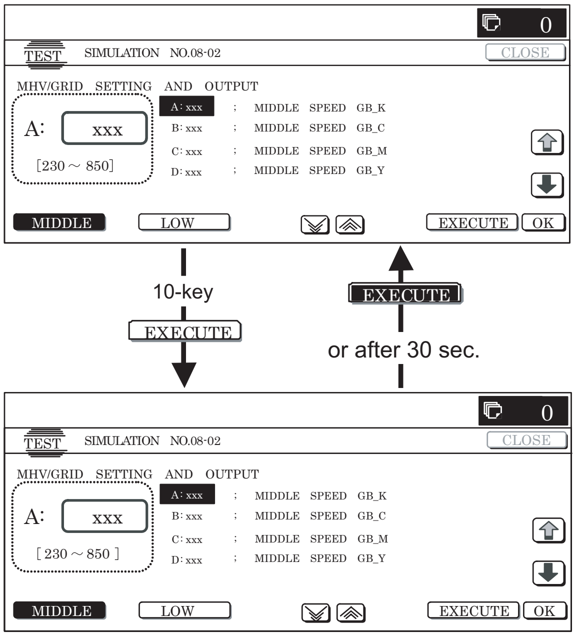
* When the MC/DV high voltage power PWB is replaced.

* When U2 trouble occurs.

* When the PCU PWB is replaced.

* When EEPROM on the PCU PWB is replaced.

1) Enter SIM8-2 mode.



TEST SIMULATION NO.08-02 CLOSE
MHV/GRID SETTING AND OUTPUT
A: xxx [230 ～ 850]
A: xxx : MIDDLE SPEED GB_K
B: xxx : MIDDLE SPEED GB_C
C: xxx : MIDDLE SPEED GB_M
D: xxx : MIDDLE SPEED GB_Y
MIDDLE LOW EXECUTE OK

TEST SIMULATION NO.08-02 CLOSE
MHV/GRID SETTING AND OUTPUT
A: xxx [230 ～ 850]
A: xxx : MIDDLE SPEED GB_K
B: xxx : MIDDLE SPEED GB_C
C: xxx : MIDDLE SPEED GB_M
D: xxx : MIDDLE SPEED GB_Y
MIDDLE LOW EXECUTE OK

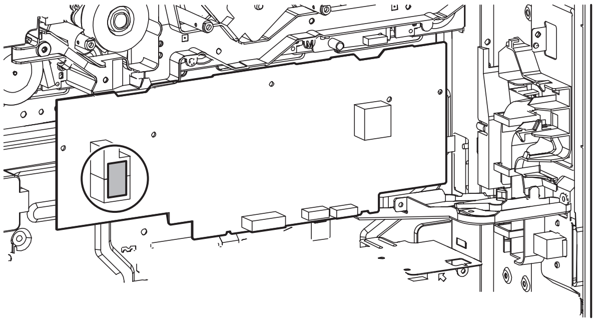
2) Select an output mode to be adjusted with the mode key and the scroll key.

3) Enter the adjustment value (specified value) of the middle speed mode and press [OK] key.

Item			Mode		Adjustment value		Monitor (MC/DV high voltage PWB)			Actual voltage
					Adjustment range	Default value	Monitor voltage (Specified value)	Connector	Pin No.	
MIDDLE	A	MIDDLE SPEED GB_K	K	Main charger grid voltage (Middle speed mode)	230 – 850	615	53.6 ± 1.61V	CNMON	8	–615V
	B	MIDDLE SPEED GB_C	C	Main charger grid voltage (Middle speed mode)	230 – 850	615	53.6 ± 1.61V	CNMON	6	–615V
	C	MIDDLE SPEED GB_M	M	Main charger grid voltage (Middle speed mode)	230 – 850	615	53.6 ± 1.61V	CNMON	4	–615V
	D	MIDDLE SPEED GB_Y	Y	Main charger grid voltage (Middle speed mode)	230 – 850	615	53.6 ± 1.61V	CNMON	2	–615V
LOW	A	LOW SPEED GB_K	K	Main charger grid voltage (Low speed mode)	230 – 850	605	52.7 ± 1.58V	CNMON	8	–605V
	B	LOW SPEED GB_C	C	Main charger grid voltage (Low speed mode)	230 – 850	605	52.7 ± 1.58V	CNMON	6	–605V
	C	LOW SPEED GB_M	M	Main charger grid voltage (Low speed mode)	230 – 850	605	52.7 ± 1.58V	CNMON	4	–605V
	D	LOW SPEED GB_Y	Y	Main charger grid voltage (Low speed mode)	230 – 850	605	52.7 ± 1.58V	CNMON	2	–605V

Remark: By setting the default value, the specified voltage is normally outputted.

The adjustment value of each color mode is specified on the label attached to the MC/DV high voltage power PWB. Enter that value.



GBK:XXX GBC:XXX GBM:XXX GBY:XXX

When the adjustment value (specified value) of the middle speed mode is set, the adjustment values of the other modes are automatically set according to the middle speed mode setting in a certain relationship.

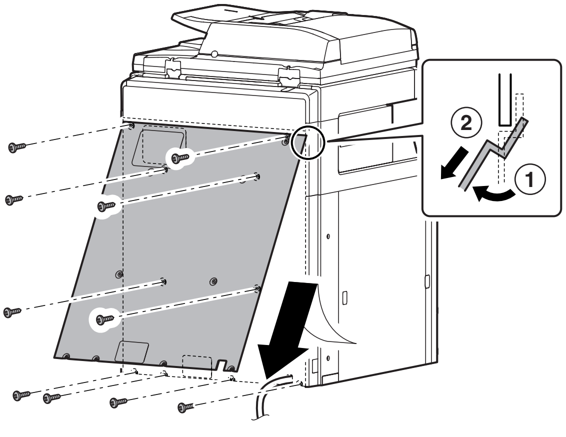
To adjust all the modes individually, first adjust the middle speed mode, and then adjust the other mode.

If the middle speed mode is adjusted after adjustment of all the modes individually, the adjustment values of the other modes are automatically changed. Use care for that.

Therefore, unless there may be an abnormality in the output voltage, there is no need to check the output value.

If it must be checked that the normal voltage is outputted or if an adjustment is required by referring to the output voltage, follow the procedures below.

1) Remove the main unit rear cover.



2) Open the PWB holder.
3) Enter SIM8-2 mode.
4) Select an output mode to be adjusted with the mode key and the scroll key.
5) Check the relationship between the pin No. of the connector CNMON on the MC/DV high voltage PWB and each adjustment mode.
6) Apply a digital multi-meter to the connector CNMON pin on the MC/DV high voltage PWB corresponding to the adjusted mode.
7) Press [EXECUTE] key.

   The main charger grid voltage is outputted for 30sec.

   If this procedure is executed for a long time, the OPC drum and the developing roller may be adversely affected. Use this procedure as short as possible.

   If possible, it is recommendable to use an unnecessary developing unit and an unnecessary OPC drum for this adjustment.
8) Check the monitor voltage with the digital multi-meter.

   If the monitor voltage is not in the range of the specified values shown in the table above, change the adjustment value and adjust again. If the specified value voltage is not obtained even though the adjustment value is changed, the following parts may be defective.

   MC/DV high voltage PWB

   PCU PWB

   Developing unit

   OPC drum unit

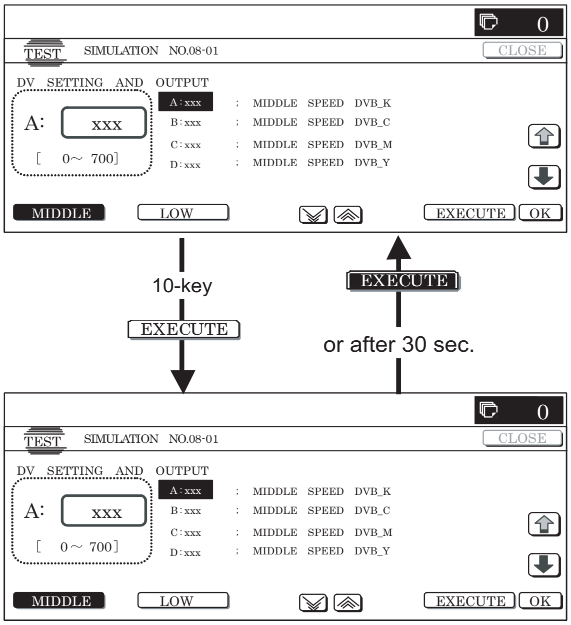
   High voltage circuit electrode

4-B Developing bias voltage adjustment

This adjustment must be executed in the following cases:

* When MC/DV high voltage power PWB is replaced.
* When U2 trouble occurs.
* When PCU PWB is replaced.
* When EEPROM on the PCU PWB is replaced.

1) Enter SIM8-1 mode.


0
TEST
SIMULATION NO.08-01
CLOSE
DV SETTING AND OUTPUT
A:
xxx
[0～ 700]
A : xxx : MIDDLE SPEED DVB_K
B : xxx : MIDDLE SPEED DVB_C
C : xxx : MIDDLE SPEED DVB_M
D : xxx : MIDDLE SPEED DVB_Y
MIDDLE
LOW
EXECUTE
OK
10-key
EXECUTE
EXECUTE
or after 30 sec.
0
TEST
SIMULATION NO.08-01
CLOSE
DV SETTING AND OUTPUT
A:
xxx
[0～ 700]
A : xxx : MIDDLE SPEED DVB_K
B : xxx : MIDDLE SPEED DVB_C
C : xxx : MIDDLE SPEED DVB_M
D : xxx : MIDDLE SPEED DVB_Y
MIDDLE
LOW
EXECUTE
OK

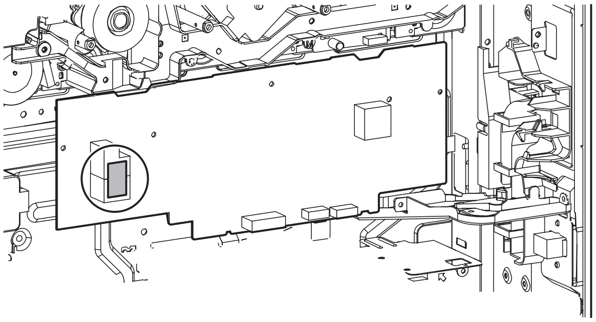
2) Select an output mode to be adjusted with the mode key and the scroll key.

3) Enter the adjustment value (specified value) of the middle speed mode and press [OK] key.

Item			Mode		Adjustment value		Monitor (MC/DV high voltage PWB)			Actual voltage
					Adjustment range	Default value	Monitor voltage (Specified value)	Connector	Pin No.	
MIDDLE	A	MIDDLE SPEED DVB_K	K	Developing bias voltage (Middle speed mode)	0 – 700	450	12.1 ± 0.36V	CNMON	7	–450V
	B	MIDDLE SPEED DVB_C	C	Developing bias voltage (Middle speed mode)	0 – 700	450	12.1 ± 0.36V	CNMON	5	–450V
	C	MIDDLE SPEED DVB_M	M	Developing bias voltage (Middle speed mode)	0 – 700	450	12.1 ± 0.36V	CNMON	3	–450V
	D	MIDDLE SPEED DVB_Y	Y	Developing bias voltage (Middle speed mode)	0 – 700	450	12.1 ± 0.36V	CNMON	1	–450V
LOW	A	LOW SPEED DVB_K	K	Developing bias voltage (Low speed mode)	0 – 700	430	11.4 ± 0.34V	CNMON	7	–430V
	B	LOW SPEED DVB_C	C	Developing bias voltage (Low speed mode)	0 – 700	430	11.4 ± 0.34V	CNMON	5	–430V
	C	LOW SPEED DVB_M	M	Developing bias voltage (Low speed mode)	0 – 700	430	11.4 ± 0.34V	CNMON	3	–430V
	D	LOW SPEED DVB_Y	Y	Developing bias voltage (Low speed mode)	0 – 700	430	11.4 ± 0.34V	CNMON	1	–430V

Remark: By setting the default value, the specified voltage is normally outputted.

The adjustment value of each color mode is specified on the label attached to the MC/DV high voltage power PWB. Enter that value.



DVK:XXX DVC:XXX DVM:XXX DVY:XXX

When the adjustment value (specified value) of the middle speed mode is set, the adjustment values of the other modes are automatically set according to the middle speed mode setting in a certain relationship.

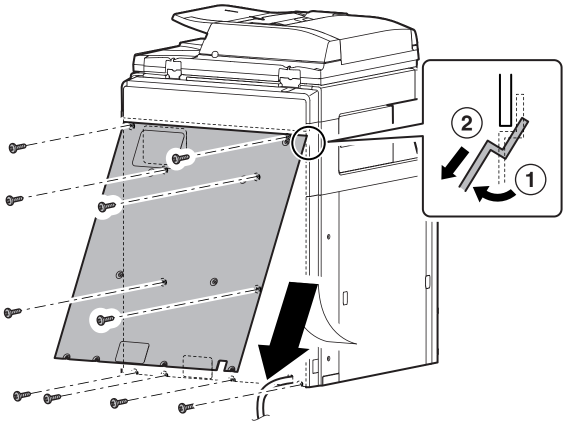
To adjust all the modes individually, first adjust the middle speed mode, then adjust the other mode.

If the middle speed mode is adjusted after adjustment of all the modes individually, the adjustment values of the other modes are automatically changed. Use care for that.

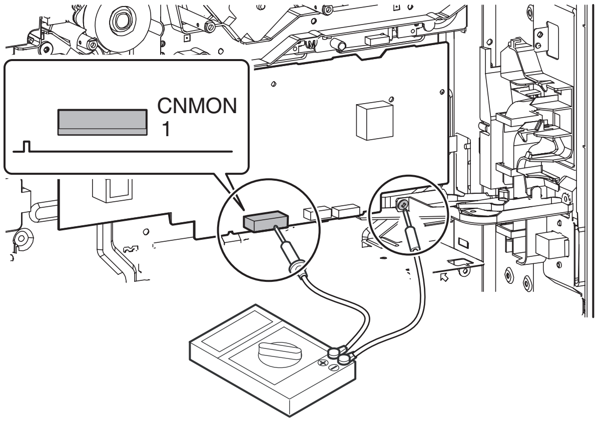
Therefore, unless there may be an abnormality in the output voltage, there is no need to check the output value.

If it must be checked that the normal voltage is outputted or if an adjustment is required by referring to the output voltage, follow the procedures below.

1) Remove the main unit rear cover.



2) Open the PWB frame.
3) Enter SIM8-1 mode.
4) Select an output mode to be adjusted with the mode key and the scroll key.
5) Check the relationship between the pin No. of the connector CNMON on the MC/DV high voltage PWB and each adjustment mode.



6) Apply a digital multi-meter to the connector CNMON pin on the MC/DV high voltage PWB corresponding to the adjusted mode.
7) Press [EXECUTE] key.

   The developing bias voltage is outputted for 30sec.
8) Check the monitor voltage with the digital multi-meter.

   If the monitor voltage is not in the range of the specified values shown in the table above, change the adjustment value and adjust again. If the specified value voltage is not obtained even though the adjustment value is changed, the following parts may be defective.

   MC/DV high voltage PWB

   PCU PWB

   Developing unit

   OPC drum unit

   High voltage circuit electrode

4-C Transfer voltage adjustment

This adjustment must be executed in the following cases:

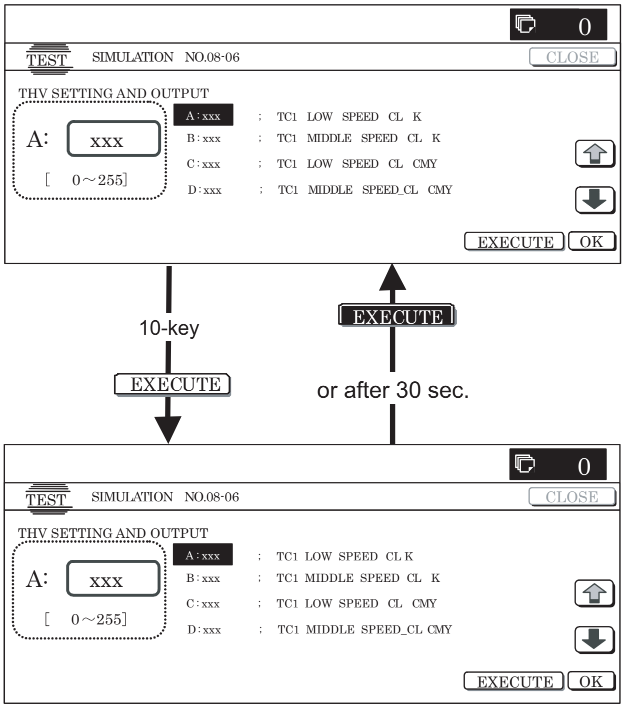
* When the TC high voltage power PWB is replaced.

* When U2 trouble occurs.

* When the PCU PWB is replaced.

* When EEPROM on the PCU PWB is replaced.

1) Enter SIM8-6 mode.



SIMULATION NO.08-06

THV SETTING AND OUTPUT

A: xxx

[0～255]

A : xxx : TC1 LOW SPEED CL K
B : xxx : TC1 MIDDLE SPEED CL K
C : xxx : TC1 LOW SPEED CL CMY
D : xxx : TC1 MIDDLE SPEED_CL CMY

2) Select a mode to be adjusted with the scroll key.
3) Enter an adjustment value (specified value) and press [OK] key.

   By setting the default value (specified value), the specified voltage is outputted.

   When [EXECUTE] key is pressed, the transfer voltage is outputted.

Item		Mode				Adjustment range	Default value	Actual output value
A	TC1 LOW SPEED CL K	Primary transfer bias reference value	Color	K	Low speed	0 – 255	78	1200V
B	TC1 MIDDLE SPEED CL K				Middle speed	0 – 255	78	1200V
C	TC1 LOW SPEED CL CMY			CMY	Low speed	0 – 255	78	1200V
D	TC1 MIDDLE SPEED CL CMY				Middle speed	0 – 255	78	1200V
E	TC1 LOW SPEED BW K		Black	K	Low speed	0 – 255	78	1200V
F	TC1 MIDDLE SPEED BW K				Middle speed	0 – 255	78	1200V
G	TC2 PLAIN CL SPX	Secondary transfer bias reference value	Color	Plain paper	Front surface	51 – 255	98	12µA
H	TC2 PLAIN CL DPX				Back surface	51 – 255	126	18µA
I	TC2 PLAIN BW SPX		Black		Front surface	51 – 255	126	18µA
J	TC2 PLAIN BW DPX				Back surface	51 – 255	98	12µA
K	TC2 HEAVY1 CL SPX		Color	Heavy paper	Front surface	51 – 255	69	6µA
L	TC2 HEAVY1 CL DPX				Back surface	51 – 255	69	6µA
M	TC2 HEAVY1 BW SPX		Black		Front surface	51 – 255	69	6µA
N	TC2 HEAVY1 BW DPX				Back surface	51 – 255	69	6µA
O	TC2 OHP CL		Color	OHP		51 – 255	60	4µA
P	TC2 OHP BW		Black			51 – 255	60	4µA
Q	TC2 ENVELOPE CL		Color	Envelope		51 – 255	98	12µA
R	TC2 ENVELOPE BW		Black			51 – 255	98	12µA
S	TC2 CLEANING		Cleaning process			51 – 255	79	8µA
T	TC2 CLEAN LOW SPD	Secondary transfer cleaning bias reference value	Low speed printing			51 – 255	72	–200V
U	TC2 CLEAN MIDDLE SPD		Middle speed printing			51 – 255	72	–200V
V	TC2 CLEAN CLEANING		Cleaning			51 – 255	156	–800V

5 Image density sensor, image registration sensor adjustment

There are some assembly variations in the image density sensor section. Therefore, the absolute detection level differs in each machine. To correct this, calibration is executed.

This adjustment must be executed in the following cases:

- When the image density sensor is replaced.
- When the image resist sensor is replaced.
- When U2 trouble occurs.
- When the PCU PWB is replaced.
- When EEPROM on the PCU PWB is replaced.

The targets of the adjustment are the color image density sensor, the black image density sensor, and the image registration sensor. There are following adjustment methods.

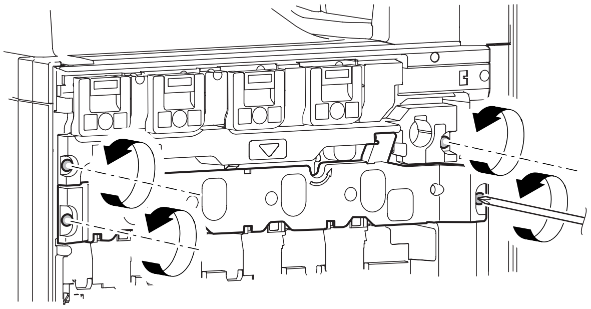
- Color image density sensor adjustment (Calibration with the adjustment jig) SIM44-13
- Black image density sensor and the image registration sensor adjustment SIM44-2

NOTE: Before executing this adjustment, check to confirm the following items.

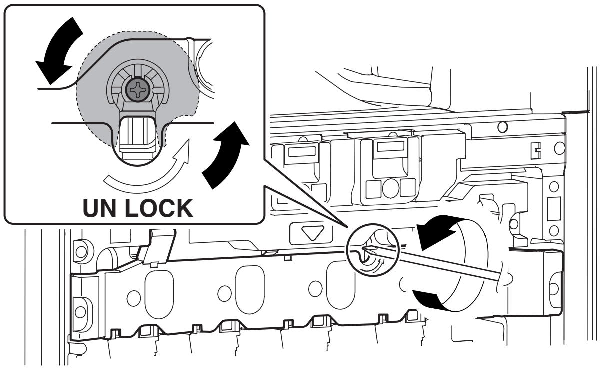
- Check to confirm that the color image density sensor, the black image density sensor, and the image registration sensor are clean.
- Check to confirm that the image density sensor calibration plate is clean.
- Check to confirm that the transfer belt is clean and free from scratches.

5-A Color image density sensor calibration

1) Open the front cabinet of the main unit, and remove the waste toner box.
2) Remove the primary transfer unit fixing screw.

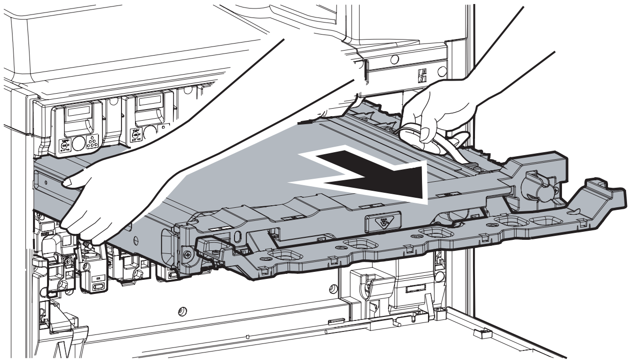


3) Turn to the transfer belt tension release cam and release the primary transfer belt tension.



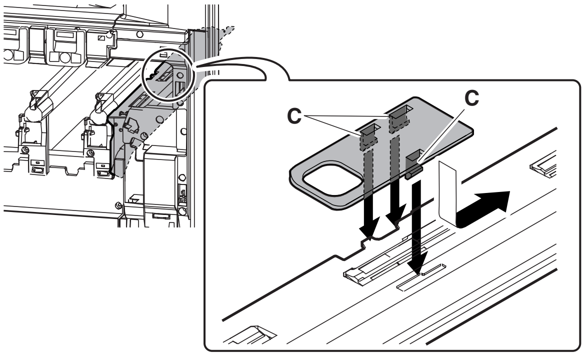
NOTE: When the transfer belt tension of the primary transfer unit is released manually, turn on the power again after completion of the work. (Power OFF-ON) This procedure initializes the transfer roller to return it to the home position.

4) Open the right cover unit (secondary transfer unit section).
5) Open the process front cover, and pull out the primary transfer belt unit.

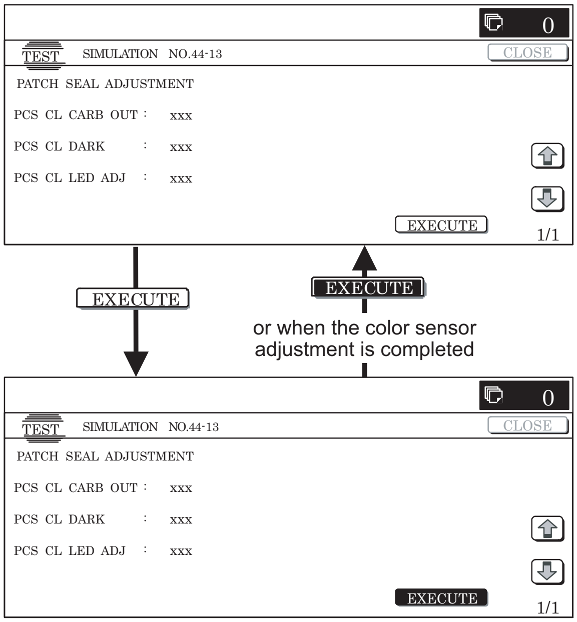


6) Install the image density sensor calibration jig to the sensor housing section.

Engage the projection (c) in the sensor housing groove, and slide it to the rear frame side.



7) Turn on the power and enter SIM44-13 mode.



TEST SIMULATION NO.44-13

PATCH SEAL ADJUSTMENT

PCS CL CARB OUT : xxx

PCS CL DARK : xxx

PCS CL LED ADJ : xxx

TEST SIMULATION NO.44-13

PATCH SEAL ADJUSTMENT

PCS CL CARB OUT : xxx

PCS CL DARK : xxx

PCS CL LED ADJ : xxx

8) Close the right cover unit (secondary transfer unit section).
9) Install the waste toner bottle to the main unit.
10) Close the front cabinet.
11) Press [EXECUTE] key.

Color image sensor calibration is automatically executed. When the operation is completed, the adjustment result is displayed and [EXECUTE] key returns to the normal display.

Display/Item		Content	Adjustment value range	Default value
A	PCS_CL CARB OUT	Color image density sensor LED current adjustment target value	1 – 255	108
B	PCS_CL DARK	Color image density sensor dark-voltage level	0 – 255	0
C	PCS_CL LED ADJ	Color image density sensor LED current adjustment target value (PCS CL CARB OUT) registered LED current level	1 – 255	21

If the adjustment is not completed normally, "ERROR" is displayed.

In that case, check the following sections for any abnormality. If any abnormality is found, repair and adjust again.

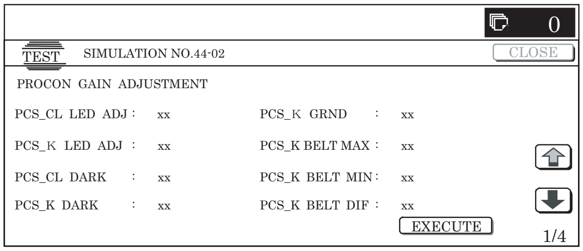
If an error occurs, the adjustment result is not revised.

- * Color image density sensor
- * PCU PWB
- * Image sensor calibration jig (standard reflection sheet dirt, scratch, discoloration)

NOTE: Store the image sensor calibration jig under low temperature, low humidity and dark place.

5-B Color image density sensor, black image density sensor, image registration sensor adjustment

1) Enter SIM44-2 mode.



SIMULATION NO.44-02

PROCON GAIN ADJUSTMENT

PCS_CL LED ADJ : xx
PCS_K LED ADJ : xx
PCS_CL DARK : xx
PCS_K DARK : xx
PCS_K GRND : xx
PCS_K BELT MAX : xx
PCS_K BELT MIN : xx
PCS_K BELT DIF : xx

2) Press [EXECUTE] key.

The color image density sensor, the black image density sensor, and the image registration sensor are automatically adjusted.

After completion of the adjustment, the adjustment result is displayed and [EXECUTE] key returns to the normal display.

Display/Item			Content	Adjustment value range	Default value
PRO CON	A	PCS_CL LED ADJ	Color image density sensor light emitting quantity adjustment value	1 – 255	21
	B	PCS _K LED ADJ	Black image density sensor light emitting quantity adjustment value	1 – 255	21
	C	PCS_CL DARK	Color image sensor dark voltage	0 – 255	0
	D	PCS_K DARK	Black image density sensor dark voltage	0 – 255	0
	E	PCS_K GRND	Belt base detection level when completion of Item B adjustment	0 – 255	0
	F	PCS_K BELT MAX	Belt base detection level (Max.)	0 – 255	0
	G	PCS_K BELT MIN	Belt base detection level (Min.)	0 – 255	0
	H	PCS_K BELT DIF	Belt base detection level difference (Item F – Item G)	0 – 255	0
REGIST	I	REG_F LED ADJ	Image registration sensor light emitting quantity adjustment value F	1 – 255	56
	J	REG_R LED ADJ	Image registration sensor light emitting quantity adjustment value R	1 – 255	56
	K	REG_F DARK	Image registration sensor dark voltage F	0 – 255	0
	L	REG_R DARK	Image registration sensor dark voltage R	0 – 255	0
	M	REG_F GRND	Belt base detection level when completion of Item I adjustment	0 – 255	0
	N	REG_R GRND	Belt base detection level when completion of Item J adjustment	0 – 256	0
	O	REG_F BELTMAX	Belt base detection level (Max.) F	0 – 255	0
	P	REG_F BELT MIN	Belt base detection level (Min.) F	0 – 255	0
	Q	REG_F BELT DIF	Belt base detection level difference (Item O – Item P)	0 – 255	0
	R	REG_R BELT MAX	Belt base detection level (Max.) R	0 – 255	0
	S	REG_R BELT MIN	Belt base detection level (Min.) R	0 – 255	0
	T	REG_R BELT DIF	Belt base detection level difference (Item R – Item S)	0 – 255	0
	U	REG_F PATCH (K)	Patch detection level F (K)	0 – 255	0
	V	REG_F PATCH (C)	Patch detection level F (C)	0 – 255	0
	W	REG_F PATCH (M)	Patch detection level F (M)	0 – 255	0
	X	REG_F PATCH (Y)	Patch detection level F (Y)	0 – 255	0
	Y	REG_R PATCH (K)	Patch detection level R (K)	0 – 255	0
	Z	REG_R PATCH (C)	Patch detection level R (C)	0 – 255	0
	AA	REG_R PATCH (M)	Patch detection level R (M)	0 – 255	0
	AB	REG_R PATCH (Y)	Patch detection level R (Y)	0 – 255	0

If the adjustment is not completed normally, "ERROR" is displayed.

In that case, check the following sections for any abnormality. If any abnormality is found, repair and adjust again.

If an error occurs, the adjustment result is not revised.

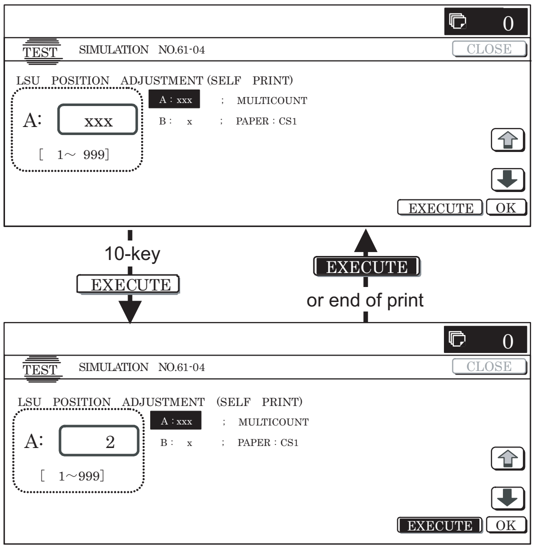
- * Color image density sensor
- * Black image density sensor
- * Image registration sensor
- * PCU PWB
- * Transfer belt (dirt, scratch)
- * Transfer belt cleaner

6 Image skew adjustment (LSU unit)

This adjustment must be executed in the following cases:

- * When the LSU (writing) unit is replaced.
- * When the LSU (writing) unit is removed from the main unit.
- * When a color image registration mistake occurs.
- * When the unit is installed or when the installing site is changed. (Required depending on the cases.)
- * When there is an uneven density area or a difference in color balance in the main scanning direction (back and forth).
- * When the OPC drum drive unit is replaced.
- * When the primary transfer unit is replaced.
- * When the color phase is not matched by the color balance adjustment.

1) Enter SIM61-4 mode.


TEST SIMULATION NO.61-04

LSU POSITION ADJUSTMENT (SELF PRINT)

A : xxx : MULTICOUNT

B : x : PAPER : CS1

A: xxx

[1~ 999]

TEST SIMULATION NO.61-04

LSU POSITION ADJUSTMENT (SELF PRINT)

A : xxx : MULTICOUNT

B : x : PAPER : CS1

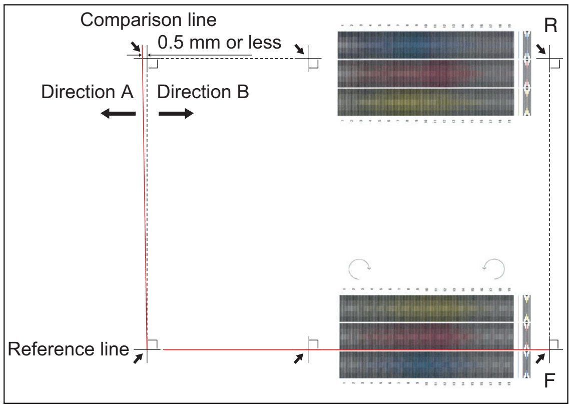
A: 2

[1~999]

2) Select the paper feed tray with A3 (11 x 17) paper in it by changing the value of set item B.

3) Press [EXECUTE] key.

The check pattern is printed out.



4) Check the printed black image for skew.

Measure the right angle level by using the six cross patterns printed in black.

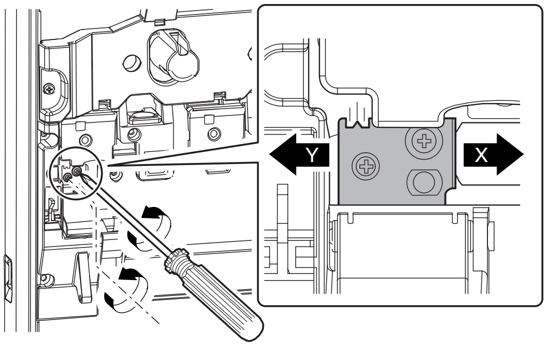
If the right angle level of the paper transverse direction print line is 0.5mm or less from the paper longitudinal direction print line, the adjustment is not required.

If not, execute the following procedures.

5) Open the front cabinet, and remove the waste toner box.

6) Loosen the LSU (writing) unit fixing screws (2 pcs.) and shift the skew adjustment screw in the arrow direction to adjust the LSU (writing) unit skew.

If the image is skewed in the arrow direction of A, shift the adjustment screw to Y direction. If the image is skewed in the arrow direction of B, shift the adjustment screw to X direction.



7) Install the waste toner box, and close the front cabinet.

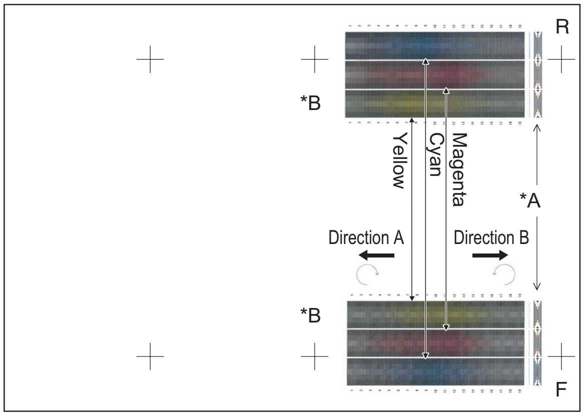
8) Execute procedures 3) – 4).

(Repeat procedures 5) – 8) until a satisfactory result is obtained.)

9) If the adjustment result reaches the satisfactory level, tighten the adjustment screw.

(The black image skew adjustment is completed with the above.)

10) In the above black image skew adjustment, check the color image skew pattern printed when completion of the adjustment.



*A: Rough adjustment pattern

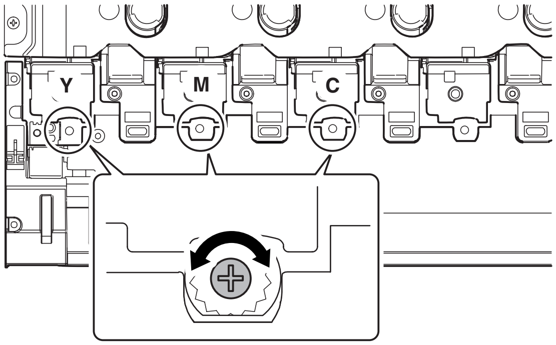
*B: Fine adjustment pattern

In each Y/M/C color print pattern printed separately in the front frame direction and in the rear frame direction, note the same print color pattern and check to confirm that the difference in the highest density sections is within ± 1 step.

(Compare the front and the rear frame positions of the same-color print color patterns. All the highest density sections of all the print color patterns may not be aligned on a line. Compare only the same-color patterns.)

If the above condition is not satisfied, execute the procedures below.

11) Turn the image skew adjustment screw of the target color to adjust.



When each adjustment screw is turned, it clicks. Turn it by 5 – 6 clicks and the check pattern is changed by 1 step (1 dot size).

When the image skew pattern on the front frame side is skewed in the arrow direction of A (to the smaller character) from the rear frame side, turn the adjustment screw counter-clockwise. When the image is skewed in the arrow direction of B (to the larger character), turn the adjustment screw clockwise.

12) Print the check pattern.

13) Check the color image skew pattern.

Repeat procedures 11) – 13) until a satisfactory result is obtained.

The image skew adjustment (LSU unit) is executed by changing the parallelism of the LSU unit scan laser beam for the OPC drum.

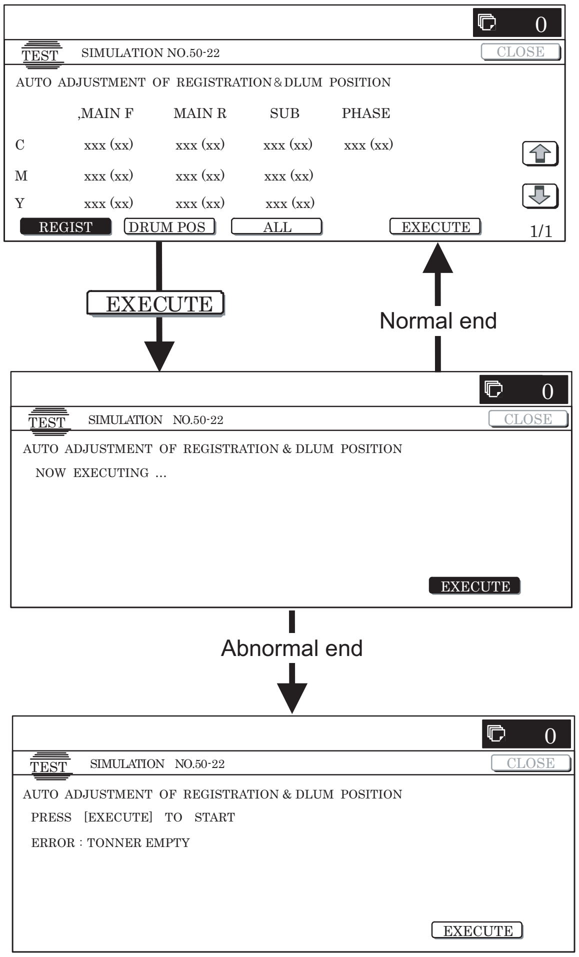
7 OPC drum phase adjustment

This adjustment must be executed in the following cases:

- * When the OPC drum is replaced.
- * When the OPC drum is removed from the main unit.
- * When the OPC drum drive section is disassembled.
- * When the OPC drum drive unit is replaced.
- * When U2 trouble occurs.
- * When the PCU MAIN PWB is replaced.
- * When EEPROM on the PCU MAIN PWB is replaced.

7-A OPC drum phase adjustment (Auto adjustment)

1) Enter SIM50-22 mode.


0
TEST
SIMULATION NO.50-22
CLOSE
REGIST
DRUM POS
ALL
EXECUTE
1/1
EXECUTE
Normal end
0
TEST
SIMULATION NO.50-22
CLOSE
EXECUTE
Abnormal end
0
TEST
SIMULATION NO.50-22
CLOSE
EXECUTE

AUTO ADJUSTMENT OF REGISTRATION&DLUM POSITION

	,MAIN F	MAIN R	SUB	PHASE
C	xxx (xx)	xxx (xx)	xxx (xx)	xxx (xx)
M	xxx (xx)	xxx (xx)	xxx (xx)	
Y	xxx (xx)	xxx (xx)	xxx (xx)	

AUTO ADJUSTMENT OF REGISTRATION & DLUM POSITION
NOW EXECUTING ...

AUTO ADJUSTMENT OF REGISTRATION & DLUM POSITION
PRESS [EXECUTE] TO START
ERROR : TONNER EMPTY

2) Press [ALL] key.

(The machine enters the OPC drum phase adjustment mode/ image registration adjustment (auto adjustment) mode, and both adjustments are executed simultaneously in this mode.)

The OPC drum phase adjustment and the image registration adjustment can be individually executed by [REGIST] button and [DRUM POS] button. Since, however, the image registration adjustment must be executed when the OPC drum phase adjustment is completed, both adjustment are executed in this adjustment simultaneously.

3) Press [EXECUTE] key.

The OPC drum phase adjustment and the image registration adjustment are executed automatically.

* After completion of the adjustment, the drum motor stops and [EXECUTE] button returns to the normal display and the adjustment result is displayed.

MAIN, SUB: Image regist adjustment value is displayed.

( ) is the difference from the previous adjustment value.

Example: This time 105.0, previous time 103.0: 105.0 (+2)

PHASE: OPC drum phase adjustment value is displayed.

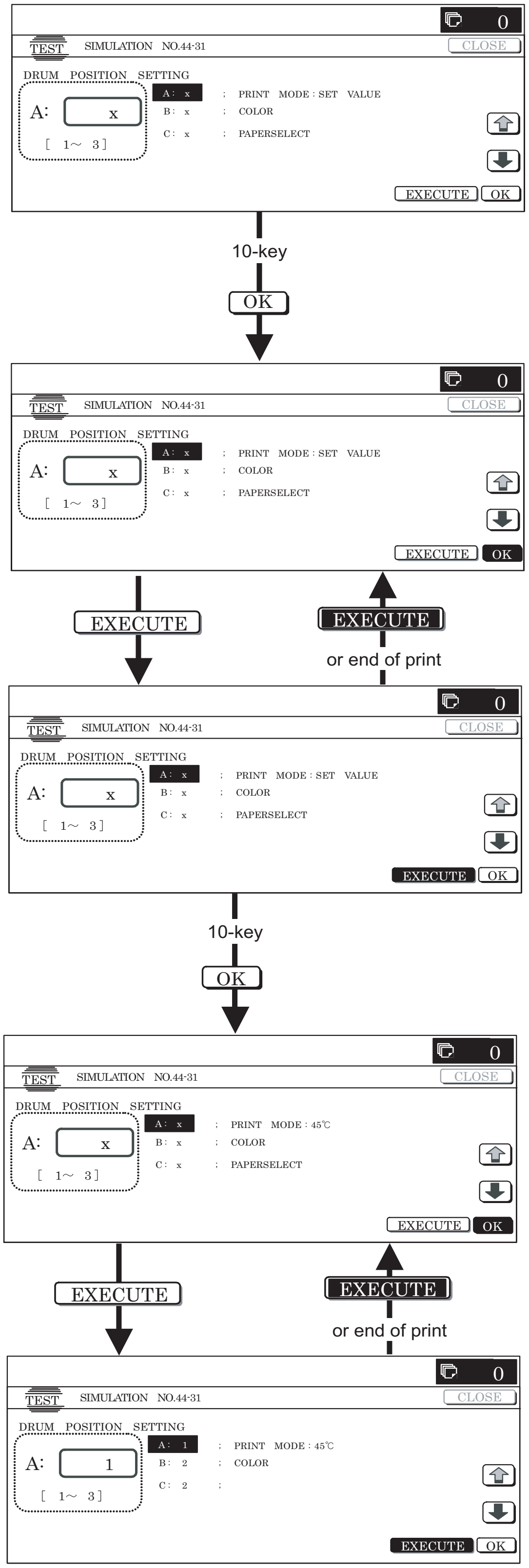
( ) is the previous adjustment value.

Example: This time 90°, previous time 45°: 3 (2)

* In case of an error, "ERROR" is displayed with the details.

7-B OPC drum phase adjustment (Manual adjustment)

1) Enter SIM44-31 mode.


0
TEST
SIMULATION NO.44-31
CLOSE
EXECUTE
OK
10-key
OK
EXECUTE
EXECUTE
or end of print
10-key
OK
EXECUTE
EXECUTE
or end of print

DRUM POSITION SETTING
A: x
[1~ 3]
A: x : PRINT MODE : SET VALUE
B: x : COLOR
C: x : PAPERSELECT

DRUM POSITION SETTING
A: x
[1~ 3]
A: x : PRINT MODE : 45℃
B: x : COLOR
C: x : PAPERSELECT

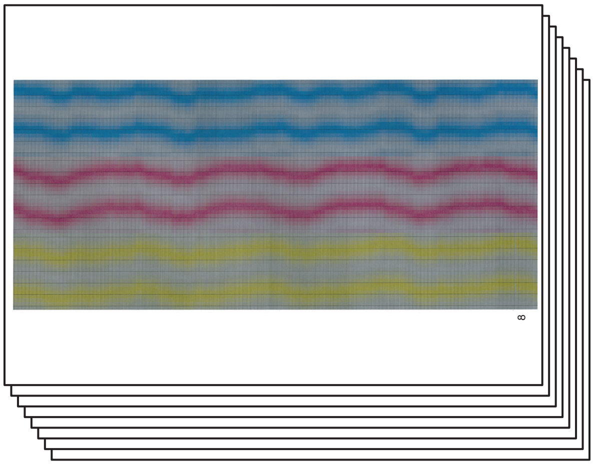
DRUM POSITION SETTING
A: 1
[1~ 3]
A: 1 : PRINT MODE : 45℃
B: 2 : COLOR
C: 2 :

2) Enter "1" with 10-key in the PRINT MODE of set item A, and press [OK] key.

3) Select the paper feed stage with A3 (or 11 x 17) in it with PAPER SELECT of set item C, and press [OK] key.

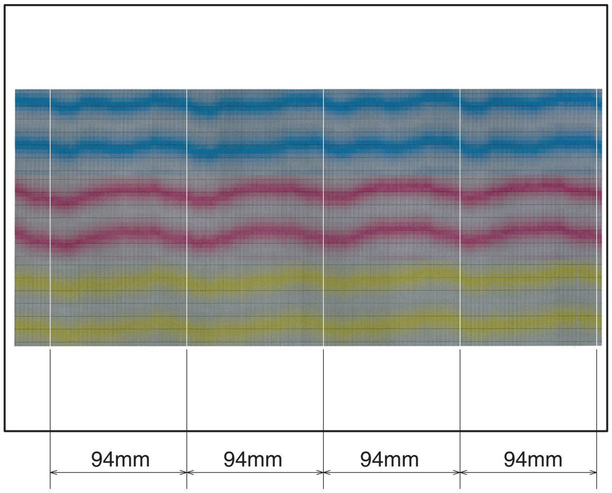
4) Press [EXECUTE] key.

The adjustment patterns (8 pages) are printed.



Each identification number ("1" – "8") is printed on each printed page of 8 adjustment patterns.

5) Check the deflection in 94mm pitch cycle of each C/M/Y print pattern. Select a print pattern of the smallest deflection for each color of C/M/Y, and use the pattern identification number as the adjustment value, and enter it to set item B. Press [OK] key.


94mm
94mm
94mm
94mm

NOTE: If there is a peculiar deflection other than the drum cycle (94mm pitch), check the following conditions.

- OPC drum drive section
- Transfer belt drive section
- Paper feed drive section
- Each motor speed set value (Set value of SIM48-6)

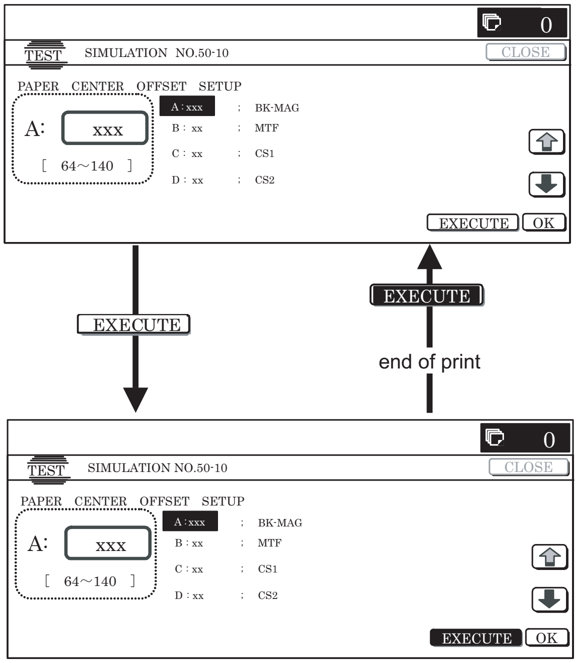
8 Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section)

8-A Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) (Manual adjustment)

This adjustment must be executed in the following cases:

- When the LSU (writing) unit is replaced.
- When U2 trouble occurs.
- When the PCU PWB is replaced.
- When EEPROM on the PCU PWB is replaced.

1) Enter SIM50-10 mode.


0
TEST
SIMULATION NO.50-10
CLOSE
PAPER CENTER OFFSET SETUP
A:
xxx
[64~140]
A : xxx : BK-MAG
B : xx : MTF
C : xx : CS1
D : xx : CS2
EXECUTE
OK
EXECUTE
EXECUTE
end of print
0
TEST
SIMULATION NO.50-10
CLOSE
PAPER CENTER OFFSET SETUP
A:
xxx
[64~140]
A : xxx : BK-MAG
B : xx : MTF
C : xx : CS1
D : xx : CS2
EXECUTE
OK

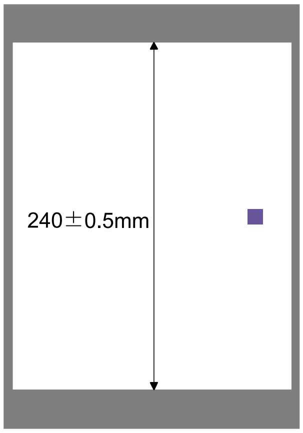
2) Set A4 (11 x 8.5) paper in the paper feed tray.

3) Select the paper feed tray set in procedure 2) with the scroll key.

4) Press [EXECUTE] key.

The check pattern is printed.

5) Check that the inside dimension of the printed half tone is 240 ± 0.5mm.



If the above condition is not satisfied, execute the procedures below.

6) Change the set value of set item A.

When the set value is changed by 1, the dimension is changed by 0.1mm.

When the set value is increased, the BK image magnification ratio in the main scanning direction is increased. When the set value is decreased, the BK image magnification ratio in the main scanning direction is decreased.

Repeat procedures 2) – 6) until a satisfactory result is obtained.

9 Image off-center adjustment (Print engine section)

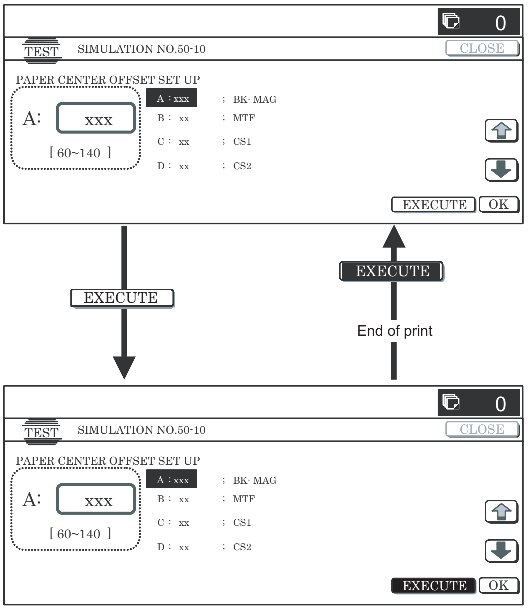
This adjustment must be executed in the following cases:

* When the LSU is replaced or removed.
* When [ADJ8] print engine image magnification ratio (BK) (main scanning direction) is performed.
* When a paper tray is replaced.
* When the paper tray section is disassembled.
* When the manual feed tray is replaced.
* When the manual feed tray is disassembled.
* When the duplex section is disassembled.
* When the duplex section is installed or replaced.
* When the large capacity paper feed tray is installed or replaced.
* When the large capacity paper feed tray section is disassembled.
* When the regist roller section is disassembled.
* When U2 trouble occurs.
* When the PCU PWB is replaced.
* When EEPROM on the PCU PWB is replaced.

(Caution)

* Before execution of this adjustment, check the following item.
* Check to insure that the print engine image magnification ratio adjustment (BK) (main scanning direction) has been properly adjusted.

1) Enter SIM50-10 mode.



SIMULATION NO.50-10

PAPER CENTER OFFSET SET UP

A: xxx [60~140]

A : xxx ; BK- MAG

B : xx ; MTF

C : xx ; CS1

D : xx ; CS2

SIMULATION NO.50-10

PAPER CENTER OFFSET SET UP

A: xxx [60~140]

A : xxx ; BK- MAG

B : xx ; MTF

C : xx ; CS1

D : xx ; CS2

2) Select set item J with the scroll key and enter the value corresponding to the paper feed tray to be adjusted.

	Display/Item		Content		Set range		Default value
A	BK-MAG		Main scan print magnification ratio BK		60 – 140		100
B	MFT		Print off-center adjustment value (Manual feed tray)		1 – 99		50
C	CS1		Print off-center adjustment value (Paper feed tray 1)		1 – 99		50
D	CS2		Print off-center adjustment value (Paper feed tray 2)		1 – 99		50
E	CS3		Print off-center adjustment value (Paper feed tray 3)		1 – 99		50
F	CS4		Print off-center adjustment value (Paper feed tray 4)		1 – 99		50
G	LCC		Print off-center adjustment value (LCC)		1 – 99		50
H	ADU		Print off-center adjustment value (ADU) Note: Before execution of this adjustment, check to insure that the adjustment items A – G have been properly adjusted. If not, this adjustment cannot be made properly.		1 – 99		50
I	MULTI COUNT		Print quantity		1 – 999		1
J	PAPER	MFT	Paper feed tray select	Manual paper feed tray	1 – 6	1	2 (CS 1)
		CS 1		Paper feed tray 1		2	
		CS 2		Paper feed tray 2		3	
		CS 3		Paper feed tray 3		4	
		CS 4		Paper feed tray 4		5	
		LCC		LCC		6	
K	DUPLEX	YES	Duplex print select	Selected	0 – 1	0	1 (NO)

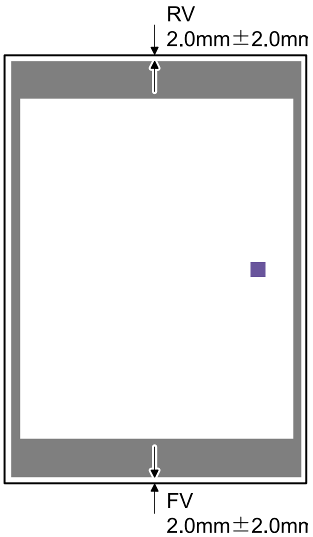
3) Set A4 (11 x 8.5) paper in the paper feed tray selected in procedure 2).

4) Press [EXECUTE] key.

The adjustment pattern is printed.

5) Check the adjustment pattern image position.

Measure the dimension of the void area in the front and the rear frame direction of the adjustment pattern, and check that all the following conditions are satisfied.



RV: REAR VOID AREA

FV: FRONT VOID AREA

RV + FV ≤ 4.0mm

RV = 2.0 ± 2.0mm

FV = 2.0 ± 2.0mm

If the above conditions are not satisfied, execute the procedures below.

6) Select the paper feed mode adjustment item (B – H) to be adjusted with the scroll key.

7) Change the adjustment value.

Enter the adjustment value and press [OK] or [EXECUTE] key.

When [EXECUTE] key is pressed, the adjustment pattern is printed.

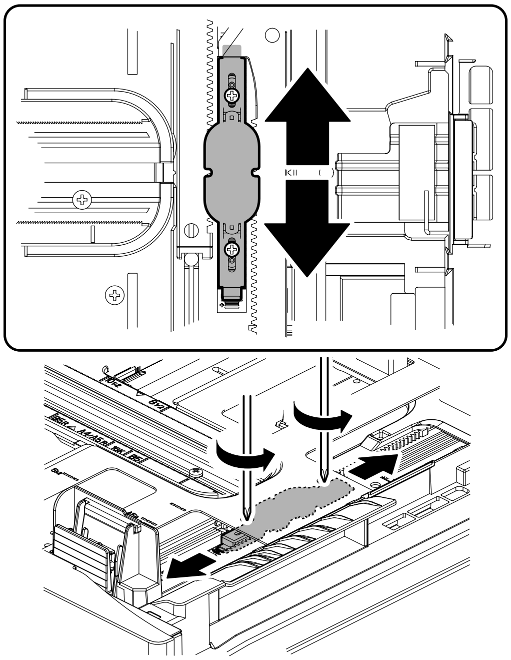
When the adjustment value is increased, the adjustment pattern is shifted to the front frame side. When it is decreased, the adjustment pattern is shifted to the rear frame side.

When the set value is changed by 1, the shift distance is changed by about 0.1mm.

Repeat procedures 3) – 7) until the conditions of procedure 5) are satisfied.

In case a satisfactory result cannot be obtained by repeating the above procedures, perform the following procedure.

8) Loosen the paper feed tray off-center adjustment screws (2 pcs.) at the center section of the lift plate of the paper feed tray, and change the gear unit position in the front/back frame direction. Repeat the adjustment procedures from 4).



10 Image registration adjustment (Print engine section)

This adjustment must be executed in the following cases:

* When the LSU (writing) unit is replaced.
* When the LSU (writing) unit is removed from the main unit.
* When the color image registration mistake in the main scanning direction occurs.
* When the color image registration mistake in the sub scanning direction occurs.
* When the unit is installed or when the installing place is changed.
* When maintenance is executed. (Replacement of the OPC drum, the OPC cartridge, the transfer unit, the transfer belt, etc.)
* When [ADJ8] print engine image magnification ratio (BK) (main scanning direction) is performed.
* When U2 trouble occurs.
* When the PCU PWB is replaced.
* When EEPROM on the PCU PWB is replaced.

■ **Note before adjustment**

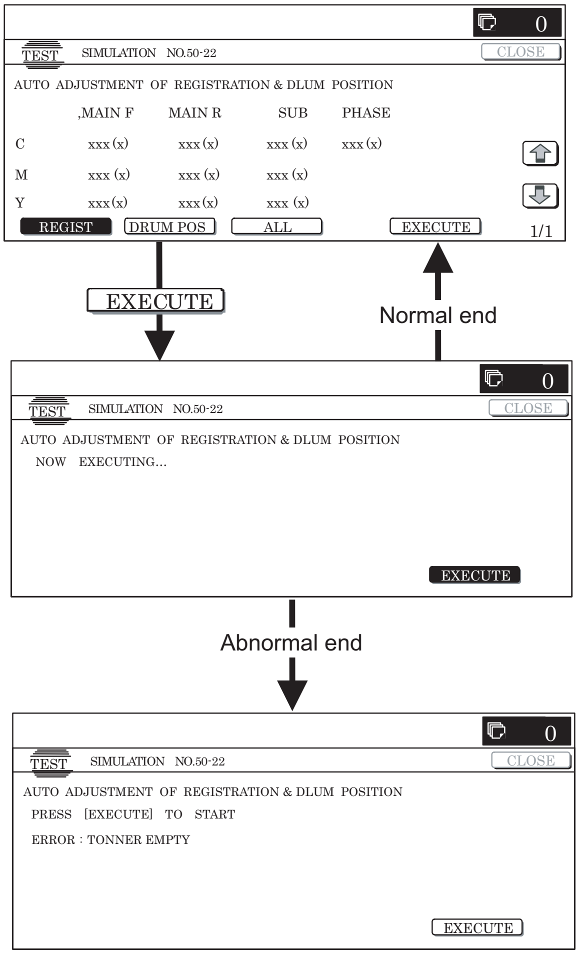
(Before execution of this adjustment, all the following adjustments must have been completed.)

* Image skew adjustment (LSU (writing) unit)
* Print engine image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section)

10-A Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment)

In this adjustment, the image registration adjustment in the main scanning direction and that in the sub scanning direction are executed simultaneously and automatically.

1) Enter SIM50-22 mode.



```
                                                    0
TEST   SIMULATION  NO.50-22                      CLOSE
AUTO ADJUSTMENT OF REGISTRATION & DLUM POSITION
        ,MAIN F    MAIN R    SUB       PHASE
C       xxx (x)    xxx (x)   xxx (x)   xxx (x)
M       xxx (x)    xxx (x)   xxx (x)
Y       xxx(x)     xxx(x)    xxx (x)
 REGIST   DRUM POS    ALL           EXECUTE       1/1
```

```
                                                    0
TEST   SIMULATION  NO.50-22                      CLOSE
AUTO ADJUSTMENT OF REGISTRATION & DLUM POSITION
  NOW  EXECUTING...

                                           EXECUTE
```

```
                                                    0
TEST   SIMULATION  NO.50-22                      CLOSE
AUTO ADJUSTMENT OF REGISTRATION & DLUM POSITION
  PRESS  [EXECUTE]  TO  START
  ERROR : TONNER EMPTY

                                           EXECUTE
```

2) Press [REGIST] key to select the image registration adjustment auto adjustment mode.

3) Press [EXECUTE] key.

[EXECUTE] key is highlighted and the image registration auto adjustment is started. After completion of the adjustment, [EXECUTE] key returns to the normal display and the adjustment result is displayed.

It takes about 40 sec to complete the adjustment.

Display/Item			Content	Adjustment value range	Default value
REGIST	MAIN F	C	Image registration adjustment value (Main scanning direction) (Cyan) (F side)	1.0 – 199.0	100
		M	Image registration adjustment value (Main scanning direction) (Magenta) (F side)	1.0 – 199.0	100
		Y	Image registration adjustment value (Main scanning direction) (Yellow) (F side)	1.0 – 199.0	100

Display/Item			Content	Adjustment value range	Default value
REGIST	MAIN R	C	Image registration adjustment value (Main scanning direction) (Cyan) (R side)	1.0 – 199.0	100
		M	Image registration adjustment value (Main scanning direction) (Magenta) (R side)	1.0 – 199.0	100
		Y	Image registration adjustment value (Main scanning direction) (Yellow) (R side)	1.0 – 199.0	100
	SUB	C	Image registration adjustment value (Sub scanning direction) (Cyan)	1.0 – 199.0	100
		M	Image registration adjustment value (Sub scanning direction) (Magenta)	1.0 – 199.0	100
		Y	Image registration adjustment value (Sub scanning direction) (Yellow)	1.0 – 199.0	100

MAIN, SUB: The entered value after adjustment is displayed.

( ): Difference from the previous value.

Example: This time 105, previous time 103: 105 (+2)

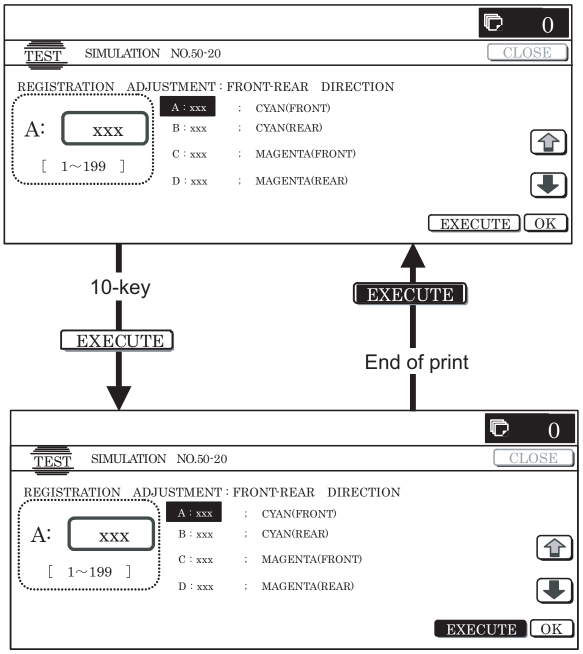
* In case of an error, "ERROR" is displayed with the details.

To check the auto adjustment result, use the manual image registration adjustment mode below.

- * Image registration adjustment (Main scanning direction) (Manual adjustment) (SIM50-20)
- * Image registration adjustment (Sub scanning direction) (Manual adjustment) (SIM50-21)

10-B Image registration adjustment (Main scanning direction) (Manual adjustment)

1) Enter SIM50-20 mode.



TEST SIMULATION NO.50-20

REGISTRATION ADJUSTMENT : FRONT-REAR DIRECTION

A: xxx

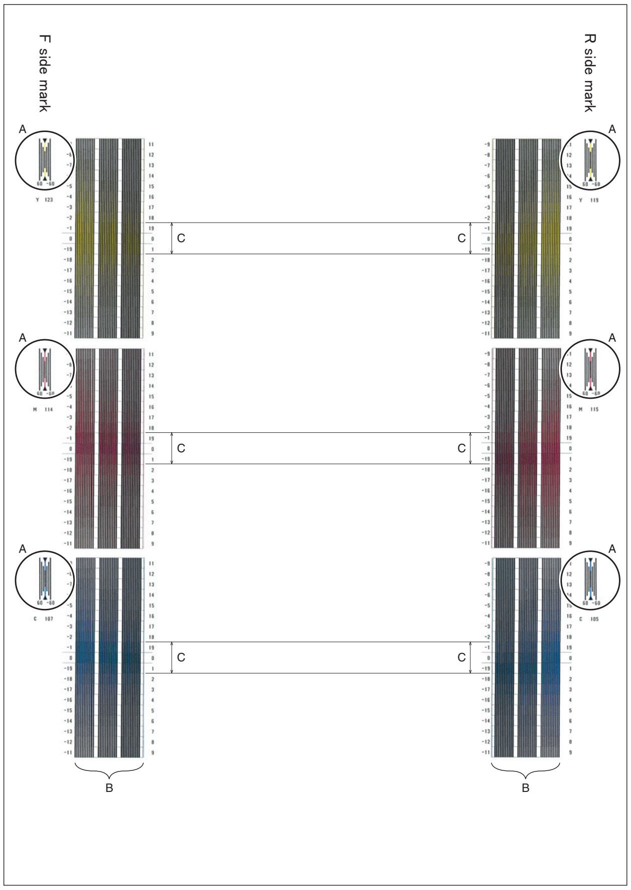
[1~199]

A : xxx : CYAN(FRONT)
B : xxx : CYAN(REAR)
C : xxx : MAGENTA(FRONT)
D : xxx : MAGENTA(REAR)

2) Select the paper feed tray with A3 (11 x 17) paper in it by changing the value of set item H.

3) Press [EXECUTE] key.

The image registration adjustment pattern in the main scanning direction is printed.



A: Rough adjustment pattern

B: Fine adjustment pattern

C: Adjustment range (0 ± 1)

4) Check the rough adjustment and the fine adjustment print pattern positions of each color in the front frame and the rear frame sides.

Use the visually highest color density section as the center, and measure the shift amount.

The front frame registration and the rear frame registration are adjusted independently.

To check the image registration, therefore, check the front frame side and the rear frame side individually.

Rough adjustment print pattern check:	Check that the rough adjustment print pattern is at the center for the rough adjustment reference pattern.
Fine adjustment print pattern check:	Check that the fine adjustment print pattern is at the center for the fine adjustment reference pattern.

(If the fine adjustment print pattern is located in the range of 0 ± 1 from the fine adjustment reference pattern scale, the adjustment is not required.)

If the above condition is not satisfied, select the color mode adjustment item A – F to be adjusted with the scroll key and change the adjustment value to adjust.

Display/Item		Content	Adjustment value range	Default value
A	CYAN (FRONT)	Image registration adjustment value (Main scanning direction) (Cyan) (F side)	1 – 199	100
B	CYAN (REAR)	Image registration adjustment value (Main scanning direction) (Cyan) (R side)	1 – 199	100
C	MAGENTA (FRONT)	Image registration adjustment value (Main scanning direction) (Magenta) (F side)	1 – 199	100
D	MAGENTA (REAR)	Image registration adjustment value (Main scanning direction) (Magenta) (R side)	1 – 199	100
E	YELLOW (FRONT)	Image registration adjustment value (Main scanning direction) (Yellow) (F side)	1 – 199	100
F	YELLOW (REAR)	Image registration adjustment value (Main scanning direction) (Yellow) (R side)	1 – 199	100

Repeat procedures 3) – 4) until a satisfactory result is obtained.

For measurement of the shift amount and the calculation of the adjustment value, refer to the table below.

(Measurement of the shift amount and the calculation of the adjustment value)

a) Measurement of the shift amount

- * Measurement of the fine adjustment pattern

  The visually highest color density section is regarded as the center, and used as the measurement value.

  (Example)

  The measurement value of the figure is "7."

- * Measurement of the rough adjustment pattern

  Check that the color line is positioned in the plus direction or in the minus direction and judge the polarity from that.

  The center black line is scaled as 0, the first line mark as 20, the second line mark as 40, the third line mark as 60. The interval between the rough adjustment marks corresponds to 20.

  (Example)

  In the case of the figure, it is between 20 – 40 of the plus polarity, and the measurement is "20."

- * The actual shift amount is the sum of the rough adjustment reference shift amount and the fine adjustment shift amount.

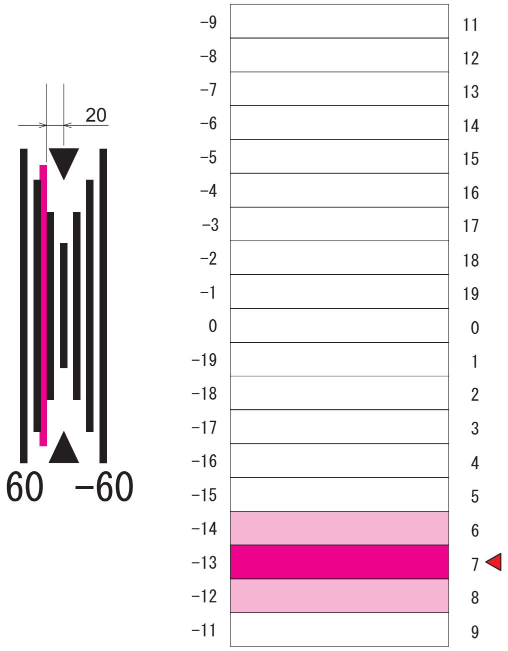
  Shift amount (correction value) = Rough adjustment shift amount + Fine adjustment shift amount

  When calculating, be careful of the plus polarity and the minus polarity.

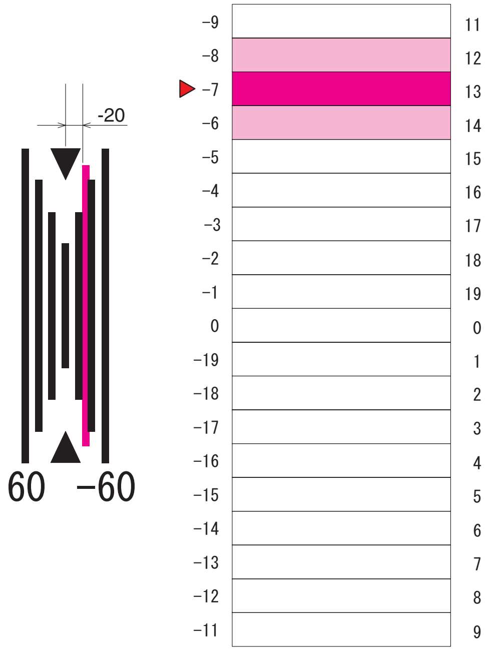
  (Example)

  In the case of the figure, the total shift amount is 27.

Measurement value: 27 (= 20 + 7)



Measurement value: –27 (= –20 – 7)



The shift amount from the adjustment reference position is calculated for each of six kinds of adjustment items A – F.

b) Adjustment value calculation

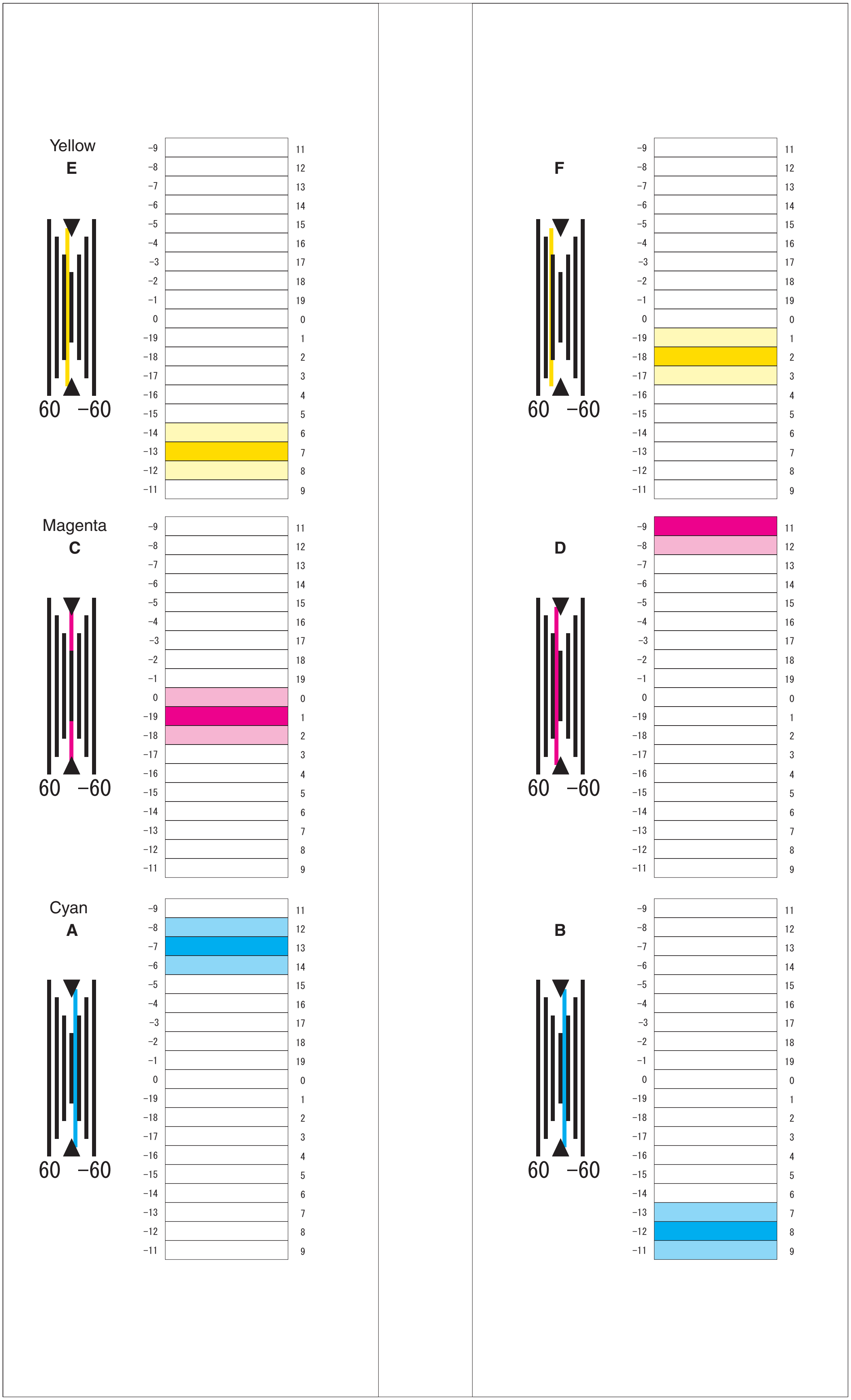
Add or subtract the shift amount calculated above to or from the current adjustment value, and the result value is used as the new adjustment value.

Adjustment value = Current adjustment value + Shift amount (correction value)

(When the shift amount (correction value) is plus)

Adjustment value = Current adjustment value – Shift amount (correction value)

(When the shift amount (correction value) is minus)



Yellow
E
60
−60
−9 −8 −7 −6 −5 −4 −3 −2 −1 0 −19 −18 −17 −16 −15 −14 −13 −12 −11
11 12 13 14 15 16 17 18 19 0 1 2 3 4 5 6 7 8 9
F
60
−60
−9 −8 −7 −6 −5 −4 −3 −2 −1 0 −19 −18 −17 −16 −15 −14 −13 −12 −11
11 12 13 14 15 16 17 18 19 0 1 2 3 4 5 6 7 8 9
Magenta
C
60
−60
−9 −8 −7 −6 −5 −4 −3 −2 −1 0 −19 −18 −17 −16 −15 −14 −13 −12 −11
11 12 13 14 15 16 17 18 19 0 1 2 3 4 5 6 7 8 9
D
60
−60
−9 −8 −7 −6 −5 −4 −3 −2 −1 0 −19 −18 −17 −16 −15 −14 −13 −12 −11
11 12 13 14 15 16 17 18 19 0 1 2 3 4 5 6 7 8 9
Cyan
A
60
−60
−9 −8 −7 −6 −5 −4 −3 −2 −1 0 −19 −18 −17 −16 −15 −14 −13 −12 −11
11 12 13 14 15 16 17 18 19 0 1 2 3 4 5 6 7 8 9
B
60
−60
−9 −8 −7 −6 −5 −4 −3 −2 −1 0 −19 −18 −17 −16 −15 −14 −13 −12 −11
11 12 13 14 15 16 17 18 19 0 1 2 3 4 5 6 7 8 9

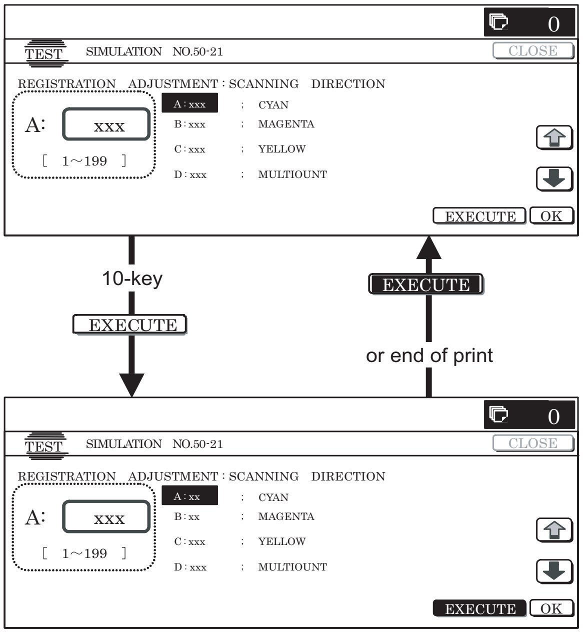
(Example)

Previous value before adjustment	New adjustment value
A: 100	A: 93 (= 100 – 7)
B: 112	B: 100 (= 112 – 12)
C: 95	C: 96 (= 95 + 1)
D: 98	D: 109 (= 98 + 11)
E: 102	E: 109 (= 102 + 7)
F: 96	F: 118 (= 96 + 22)

NOTE: If either of front or rear adjustment value is changed, the other adjustment print pattern position may be varied. Be careful of that.

10-C Image registration adjustment (Sub scanning direction) (Manual adjustment)

1) Enter SIM50-21 mode.



SIMULATION NO.50-21

REGISTRATION ADJUSTMENT : SCANNING DIRECTION

A: xxx

[1~199]

A : xxx : CYAN
B : xxx : MAGENTA
C : xxx : YELLOW
D : xxx : MULTIOUNT

SIMULATION NO.50-21

REGISTRATION ADJUSTMENT : SCANNING DIRECTION

A: xxx

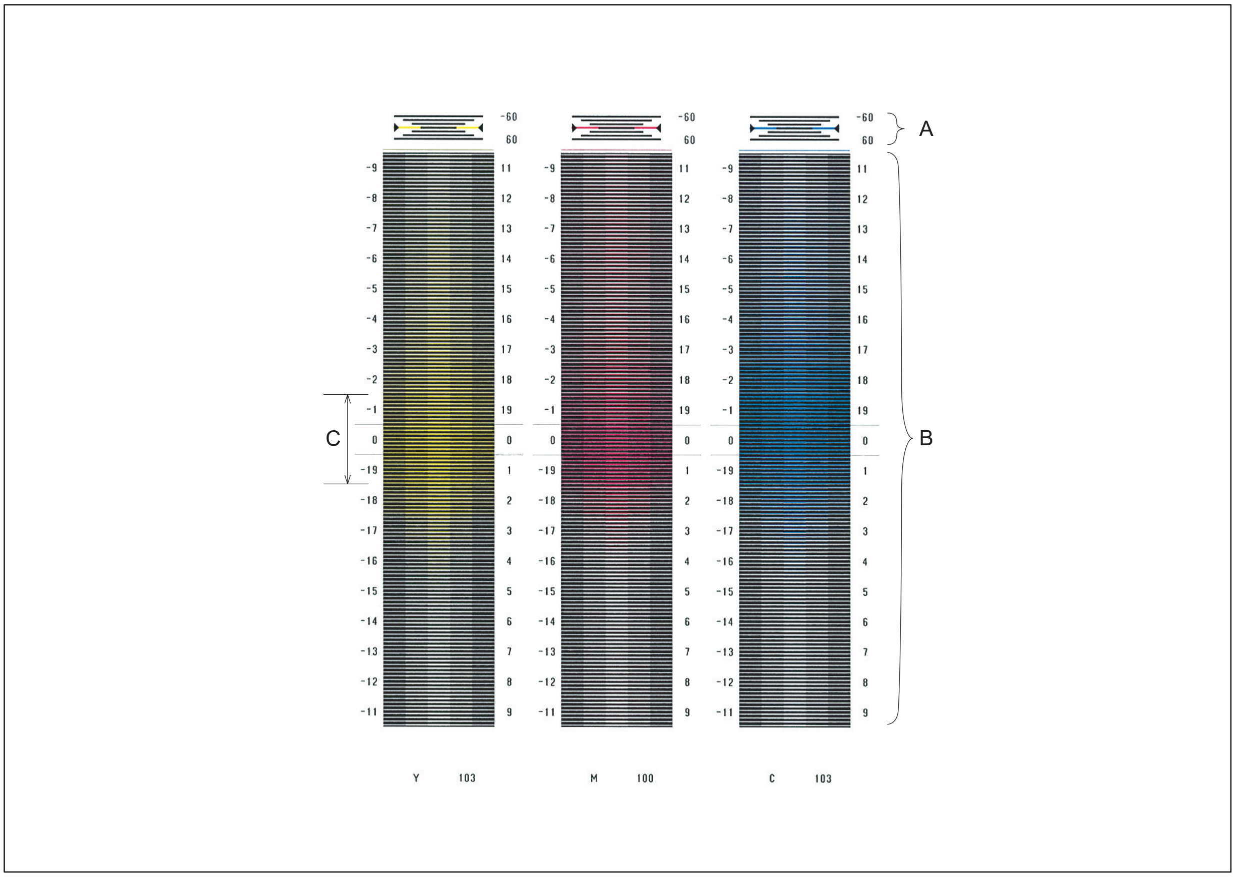
[1~199]

A : xx : CYAN
B : xx : MAGENTA
C : xxx : YELLOW
D : xxx : MULTIOUNT

2) Select the paper feed tray with A4 (11 x 8.5) or A3 (11 x 17) paper in it by changing the value of set item H.

3) Press [EXECUTE] key.

The sub scanning direction image registration adjustment pattern is printed.



A: Rough adjustment pattern

B: Fine adjustment pattern

C: Adjustment range

4) Check the rough adjustment and the fine adjustment print pattern positions of each color.

The visually highest color density section is regarded as the center, and used as the measurement value.

Rough adjustment print pattern check:	Check that the rough adjustment print pattern is at the center for the rough adjustment reference pattern.
Fine adjustment print pattern check:	Check that the fine adjustment print pattern is at the center for the fine adjustment reference pattern.

(If the fine adjustment print pattern is positioned in the range of 0 ± 1 for the fine adjustment reference pattern scale, the adjustment is not required.)

If the above condition is not satisfied, select the color mode adjustment item A – C to be adjusted with the scroll key, and change the adjustment value to adjust.

Display/Item		Content	Adjustment value range	Default value
A	CYAN	Image registration adjustment value (Sub scanning direction) (Cyan)	1 – 199	100
B	MAGENTA	Image registration adjustment value (Sub scanning direction) (Magenta)	1 – 199	100
C	YELLOW	Image registration adjustment value (Sub scanning direction) (Yellow)	1 – 199	100

Repeat procedures 3) – 4) until a satisfactory result is obtained.

For measurement of the shift amount and calculation of the adjustment value, refer to the table below.

(Measurement of the shift amount and calculation of the adjustment value)

a) Measurement of the shift amount

* Measurement of the fine adjustment pattern

The visually highest color density section is regarded as the center, and used as the measurement value of the shift amount.

(Example)

The measurement value of the figure is "7."

* Measurement of the rough adjustment pattern

Check that the color line is positioned in the plus direction or in the minus direction and judge the polarity from that.

The center black line mark is scaled as 0, the first line mark as 20, the second line mark as 40, the third line mark as 60. The interval between the rough adjustment marks corresponds to 20.

(Example)

In the case of the figure, it is between 20 – 40 of the plus polarity, and the measurement is "20."

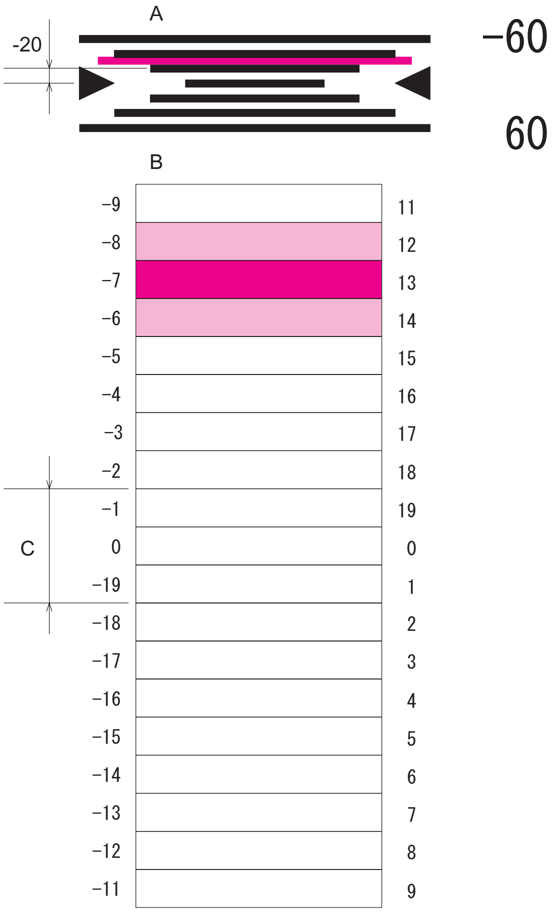
A: Rough adjustment pattern

B: Fine adjustment pattern

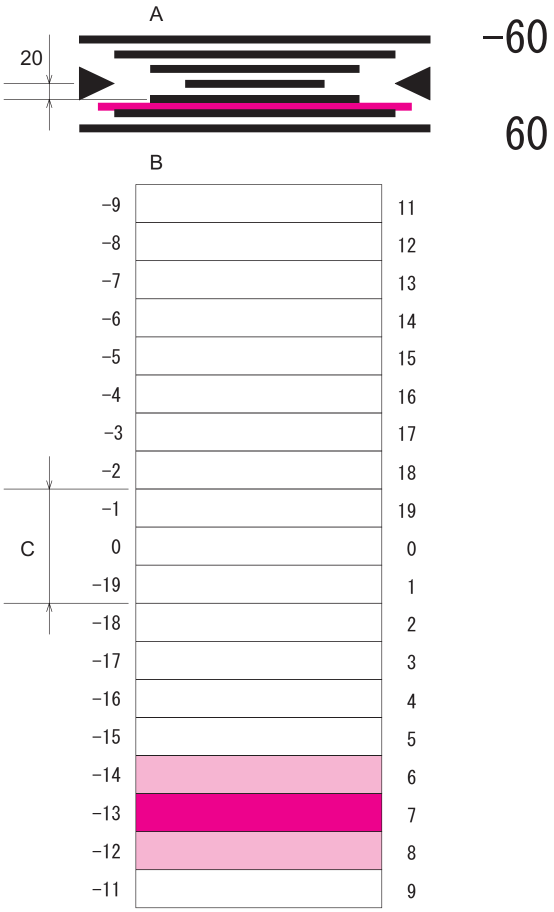
C: Adjustment range

The shift amount is calculated from the adjustment reference position for each of the three adjustment items A – C.

Measurement value: –27 (= –20 – 7)



Measurement value: 27 (= 20 + 7)



b) Adjustment value calculation

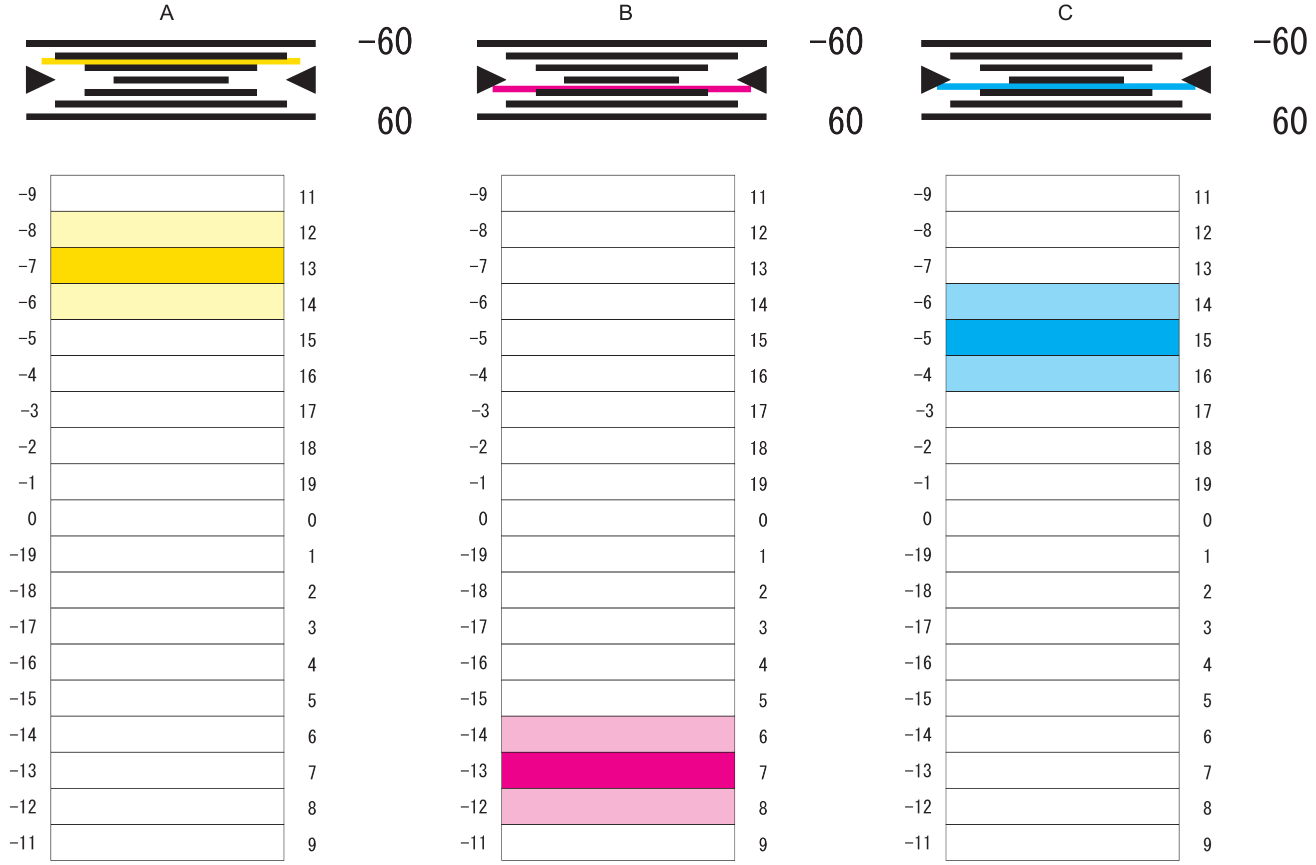
Add or subtract the shift amount calculated above to or from the current adjustment value, and the result value is used as the new adjustment value.

Adjustment value = Current adjustment value + Shift amount (correction value)

(When the shift amount (correction value) is plus)

Adjustment value = Current adjustment value – Shift amount (correction value)

(When the shift amount (correction value) is minus)



Previous adjustment value	New adjustment value
A: 100	A: 73 (= 100 – 27)
B: 112	B: 119 (= 112 + 7)
C: 95	C: 110 (= 95 + 15)

11 Scan image distortion adjustment

This adjustment is required in the following cases:

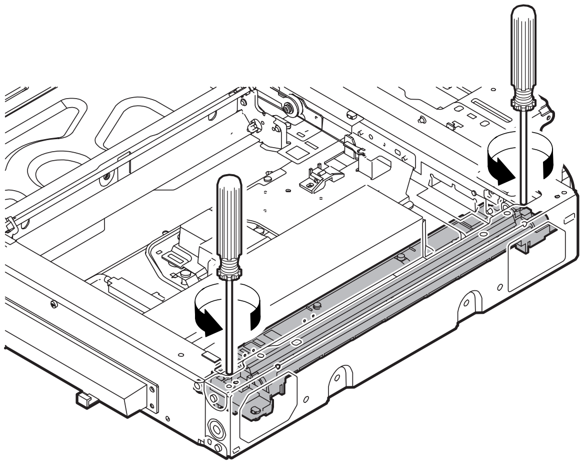
* When the scanner (reading) section is disassembled.

* When the copy image is distorted.

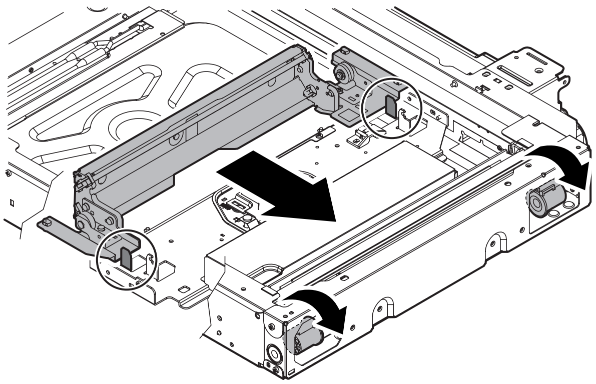
11-A Scanner (reading) unit parallelism adjustment

Before execution of this adjustment, remove the document table glass. (For details, refer to Chapter [C]-3.)

1) Loosen the fixing screws of the scanner unit A and the drive wire, and remove the scanner unit A from the drive wire.

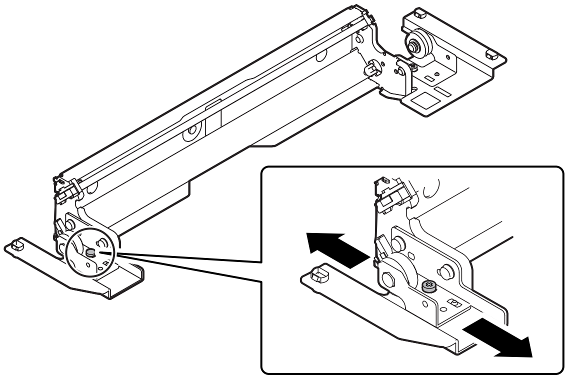


2) Turn the scanner drive pulley manually and shift the scanner unit B to bring it into contact with the stopper. When the scanner unit B is in contact with the two stoppers on the front and the rear frames simultaneously, the parallelism is proper.



If not, perform the following procedures.

3) Loosen the fixing screw of the pulley angle on the front frame side of the scanner unit.



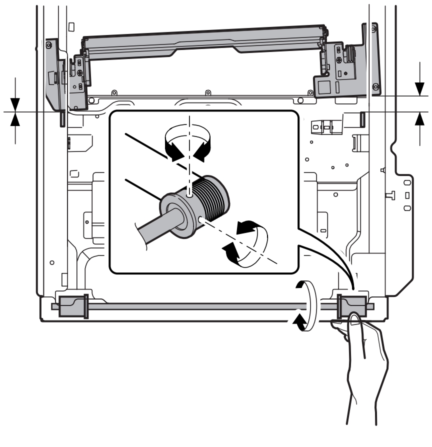
4) Adjust the position of the pulley angle on the front frame side of the scanner unit B so that it is in contact with two stoppers simultaneously.

5) Fix the pulley angle on the front frame side of the scanner unit B.

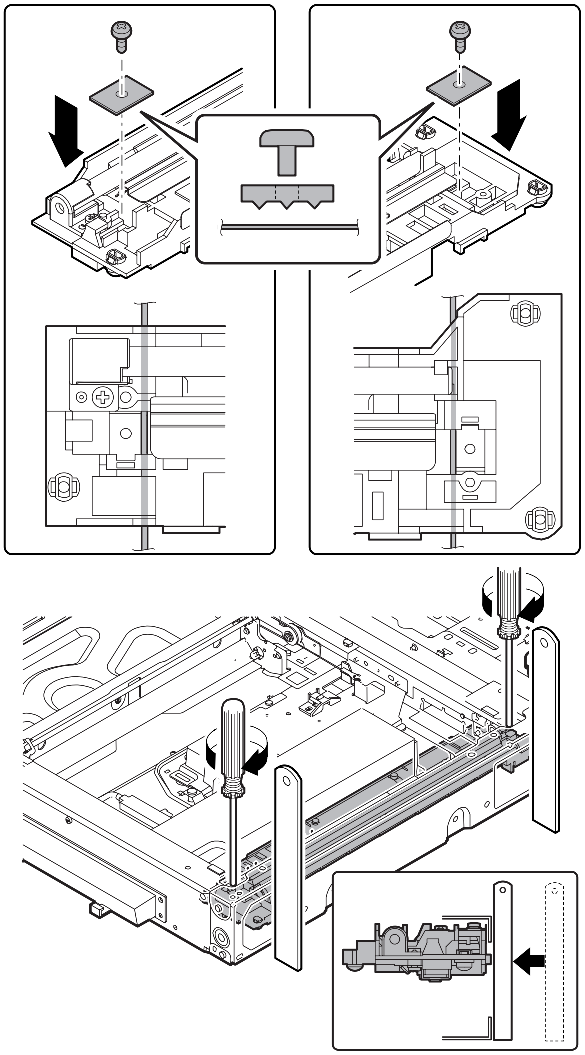
If a satisfactory result is not obtained from the above procedures, perform the following procedures.

Loosen the fixing screw of the scanner unit drive pulley which is not in contact.

Without moving the scanner unit drive shaft, turn the scanner unit drive pulley manually and adjust so that the scanner unit B is in contact with both stoppers on the front frame and the rear frame simultaneously. (Change the relative position of the scanner unit drive pulley and the drive shaft.) Fix the scanner unit drive pulley fixing screw.

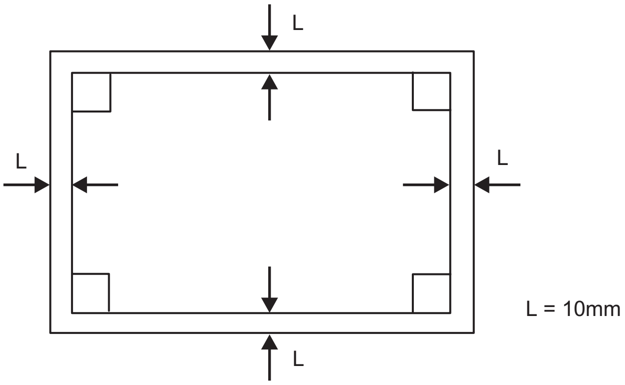


6) With the scanner unit B in contact with both stoppers, fit the edge of the scanner unit A with the right edge of the frame, and fix the scanner unit A with the fixing screw.

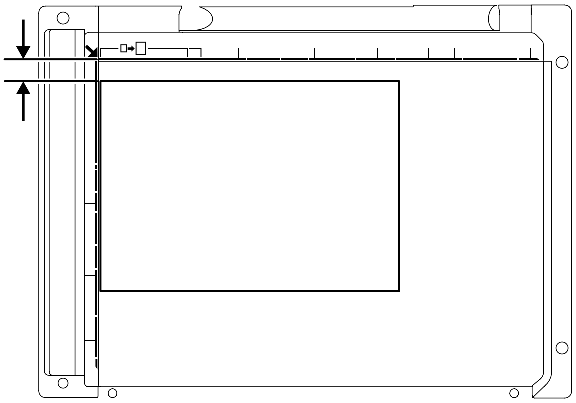


11-B Scan image (sub scanning direction) distortion adjustment

1) Make a test chart with A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)

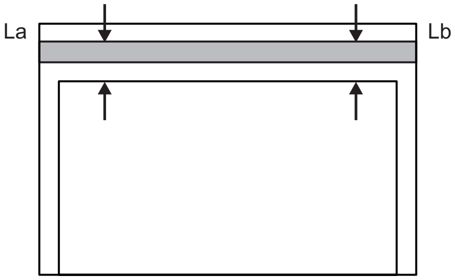


2) Set the test chart prepared in the procedure 1) on the document table. (Shift the test chart edge 30mm from the reference position as shown below.) With the document cover open, make a copy on A3 (11" x 17") paper.



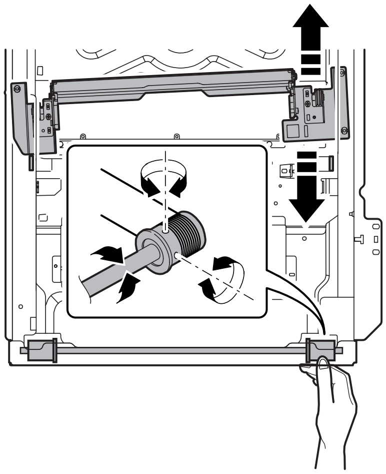
3) Check for distortion in the sub scanning direction.

If La = Lb, there is no distortion.



If there is any distortion in the sub scanning direction, perform the following procedures.

4) Loosen either one of the fixing screws of the scanner unit drive pulley. (Either one on the front frame or on the rear frame will do.)



5) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley to change the parallelism of the scanner unit A and B. (Change the relative position of the scanner unit drive pulley and the drive shaft.)

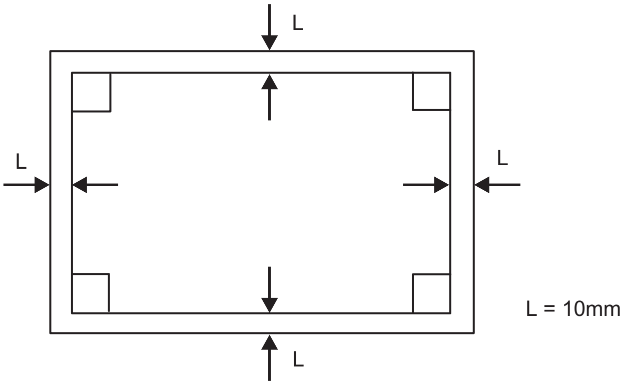
6) Tighten the scanner unit drive pulley fixing screw.

Repeat the procedures 2) – 6) until the condition of the procedure 3) is satisfied.

If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform "ADJ 11D Scan image distortion adjustment (whole scanner unit)."

11-C Scan image (main scanning direction) distortion adjustment

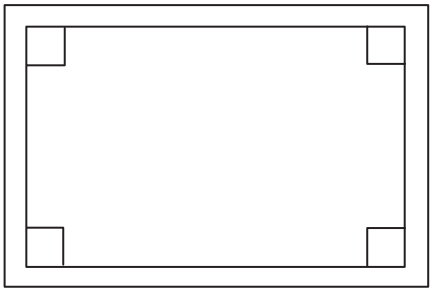
1) Make a test chart on A3 (11" – 17") paper. (Draw a rectangular with four right angles.)



2) Set the test chart prepared in the procedure 1) on the document table, and make a copy on A3 (11"x 17") paper.

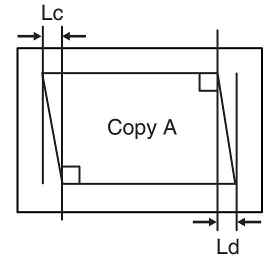
3) Check for distortion in the main scanning direction.

If the four angles of the copy image are right angles, there is no distortion. (Completion of the adjustment)

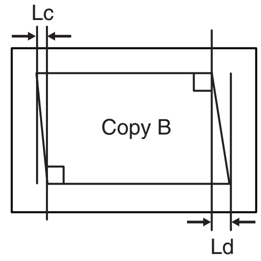


If there is any distortion in the main scanning direction, perform the following procedure.

4) Check the difference (distortion balance) between the image distortions on the right and the left.



There is no difference between the distortion on the right and that on the left.
Lc = Ld



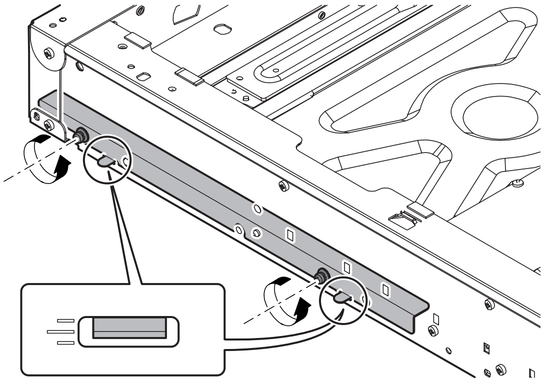
There is some difference between the distortion on the right and that on the left.
Lc ≠ Ld

If Lc = Ld, there is no difference between the right and the left image distortions.

If the above condition is satisfied, go to the procedure 6).

If not, perform the following procedures.

5) Change the height balance of the scanner rail on the front frame side.



Remove the lower cabinet of the operation panel. Loosen the scanner rail fixing screw to change the balance between the right and the left heights of the scanner rail.

Repeat the procedures 2) – 5) until the difference between the image distortions (distortion balance) is deleted.

6) Without changing the balance of the scanner rail on the front frame side, change the overall height.

7) Set the test chart prepared in the procedure 1) and make a copy on A3 (11" x 17") paper. Check that the distortion in the main scanning direction is within the specified range.

Repeat the procedures 6) and 7) until the distortion in the main scanning direction is in the specified range.

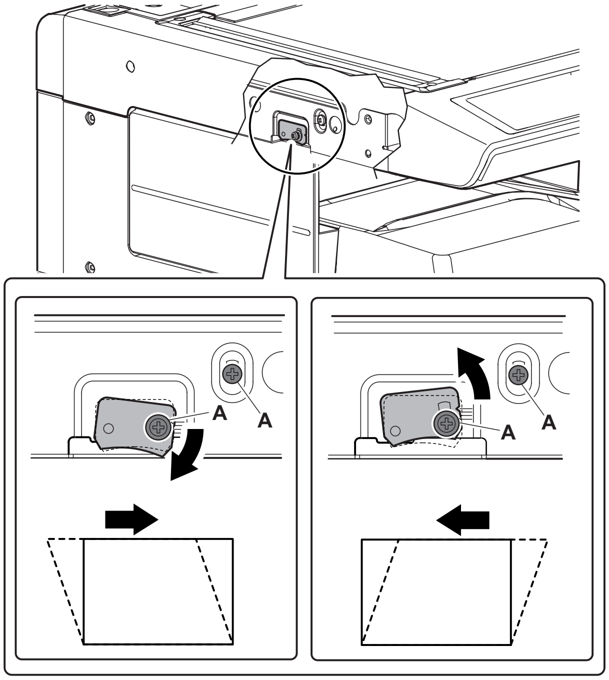
If the distortion in the sub scanning direction cannot be deleted with the above procedures, perform "ADJ 11D Scan image distortion adjustment (Whole scanner)."

11-D Scan image distortion adjustment (Whole scanner)

This adjustment is executed when scan image distortion cannot be adjusted with ADJ 11A, ADJ 11B, and ADJ 11C related to the scan image distortion adjustment.

Change the upper and lower positions of the scanner unit distortion adjustment plate on the right edge of the scanner unit so that the scan image distortion is minimized. By adjusting the distortion of the whole scanner unit, the scan image distortion is adjusted.

1) Loosen the fixing screw (A).
2) Adjust the scanner unit distortion adjustment plate.

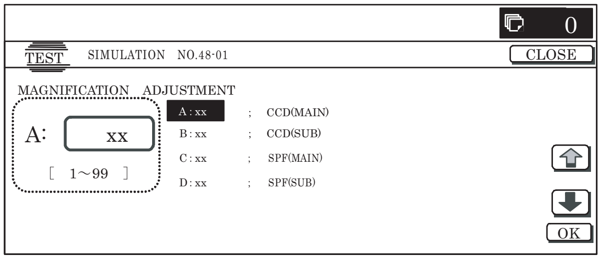


12 Scan image focus adjustment (CCD unit position adjustment)

This adjustment is required in the following cases:

* When the CCD unit is removed from the machine.
* When the CCD unit is replaced.
* When the copy image focus is not properly adjusted.
* When the copy magnification ratio in the copy image main scanning direction is not properly adjusted.
* When a U2 trouble occurs.

1) Enter the simulation 48-1 mode.



TEST SIMULATION NO.48-01

MAGNIFICATION ADJUSTMENT

A: xx

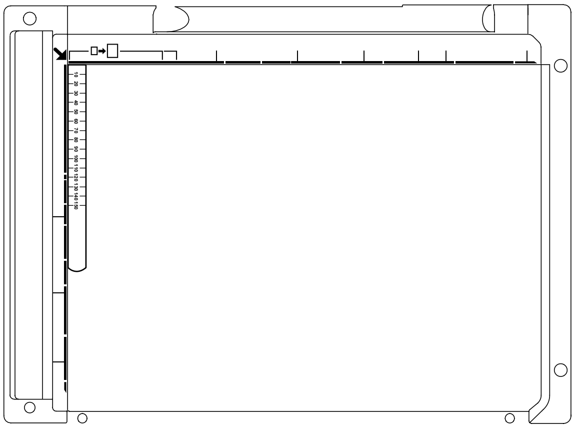
[1～99]

A : xx ; CCD(MAIN)
B : xx ; CCD(SUB)
C : xx ; SPF(MAIN)
D : xx ; SPF(SUB)

2) Set the adjustment item CCD (MAIN) to 50 (default value).

Select the adjustment item with the scroll key, and enter the adjustment value with 10-key and press [OK] key.

3) Place a scale on the document table as shown in the figure below.



4) Make a normal copy on A4 paper.

Press [CLOSE] key to shift from the simulation mode to the copy mode, and make a copy.

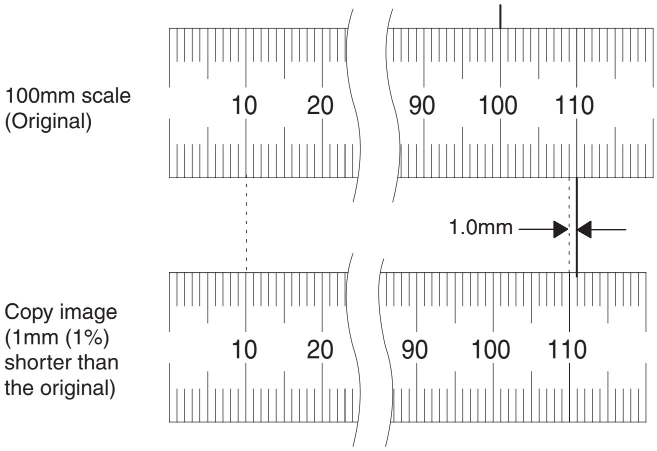
5) Compare the scale length with the scale image length on the copy paper.

6) Obtain the copy magnification ratio correction ratio in the main scanning direction from the following formula.

Main scanning direction copy magnification ratio correction ratio = (Original size – Copy image size) / Original size x 100%

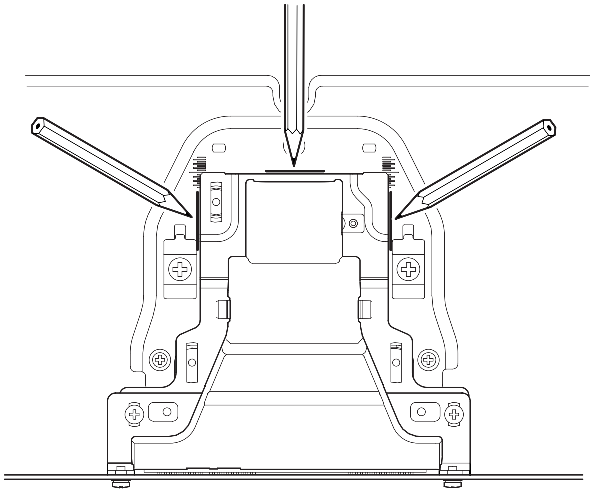
Example: Compare the scale of 10mm with the scale of 10mm on the copy image.

Main scanning direction copy magnification ratio correction ratio = (100 – 99) / 100 x 100 = 1



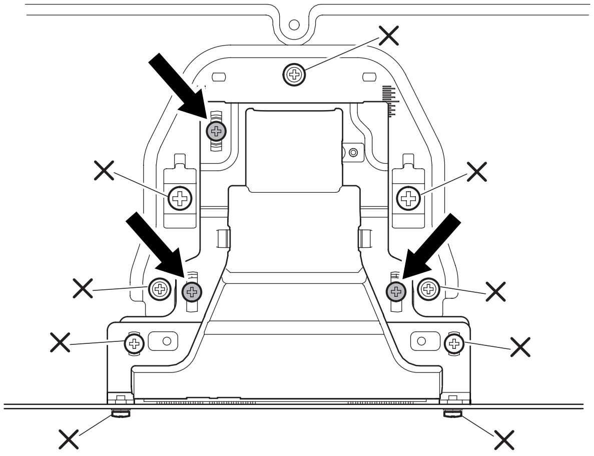
If the copy magnification ratio is not satisfactory, perform the following procedures.

7) Remove the document table glass.
8) Remove the dark box cover.
9) To prevent against shift of the CCD unit optical axis, mark the CCD unit base as shown below.



* This procedure must be executed also when the CCD unit is replaced.

10) Loosen the CCD unit fixing screws.



* **Never loosen the screws marked with ×.**

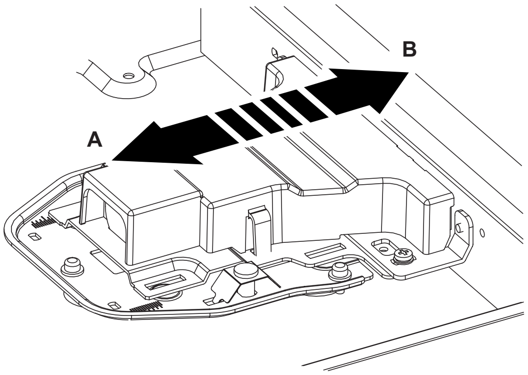
If any one of these screws is loosened, the position and the angle of the CCD unit base may be changed to cause a problem, which cannot be adjusted in the market. In that case, the whole scanner unit must be replaced.

11) Slide the CCD unit in the arrow direction (CCD sub scanning direction) to change the installing position.

When the copy image is longer than the original scale, shift the CCD unit in the direction B. When the copy image is shorter than the original scale, shift the CCD unit in the direction A. One scale of mark-off line corresponds to 0.2%.

At that time, fix the CCD unit so that it is in parallel with the scale on the front and the rear side of the CCD unit base.

* Fix the CCD unit so that it is in parallel with the line marked in procedure 9).



12) Make a copy and check the copy magnification ratio again.

If the copy magnification ratio is not in the range of 100 ± 1%, repeat the procedures of 9) – 11) until the condition is satisfied.

NOTE: By changing the CCD unit fixing position with the simulation 48-1 adjustment value at 50, the copy magnification ratio is adjusted within the specified range (100 ± 1.0%) and the specified resolution is obtained based on the optical system structure.

13 Scan image skew adjustment (RSPF) (Refer to MX-RPX1 SM.)

14 Scan image magnification ratio adjustment (Document table mode)

This adjustment is required in the following cases:

* When the copy image magnification ration in the sub scanning direction is not properly adjusted.

* When the scanner motor is replaced.

* When a U2 trouble occurs.

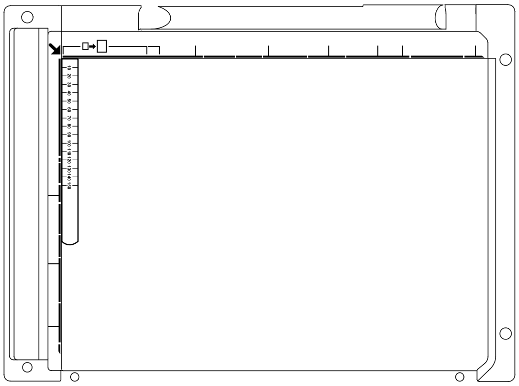
* When the scanner control PWB is replaced.

* When the EEPROM on the scanner control PWB is replaced.

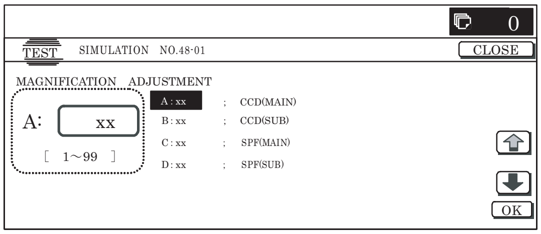
Before this adjustment, the focus adjustment (CCD unit installing position adjustment) must have been completed.

14-A Scan image magnification ratio adjustment (Main scanning direction) (Document table mode)

1) Place a scale on the document table as shown in the figure below.



2) Enter the simulation 48-1 mode.



SIMULATION NO.48-01

MAGNIFICATION ADJUSTMENT

A: xx

[1～99]

A : xx ; CCD(MAIN)
B : xx ; CCD(SUB)
C : xx ; SPF(MAIN)
D : xx ; SPF(SUB)

3) Make a normal copy and obtain the copy magnification ratio.

Press [CLOSE] key and shift from the simulation mode to the copy mode and make a copy.

4) Check that the copy magnification ratio is within the specified range (100 ± 1.0%).

If the copy magnification ratio is within the specified range (100 ± 1.0%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.

5) Change the CCD (MAIN) adjustment value of Simulation 48-1.

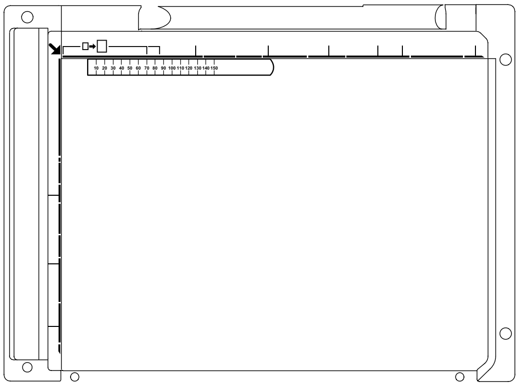
When the adjustment value is increased, the copy magnification ratio in the sub scanning direction is increased.

When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.

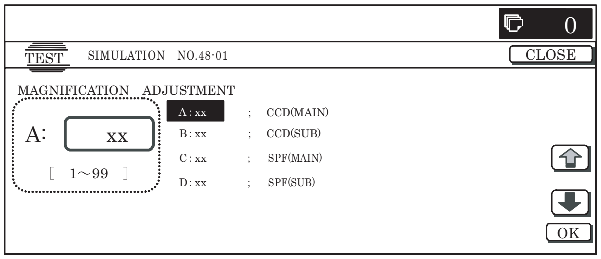
Repeat the procedures 3) – 5) until the copy magnification ratio is within the specified range (100 ± 1.0%).

14-B Scan image magnification ratio adjustment (Sub scanning direction) (Document table mode)

1) Place a scale on the document table as shown in the figure below.



2) Enter the simulation 48-1 mode.



SIMULATION NO.48-01

MAGNIFICATION ADJUSTMENT

A: xx

[1～99]

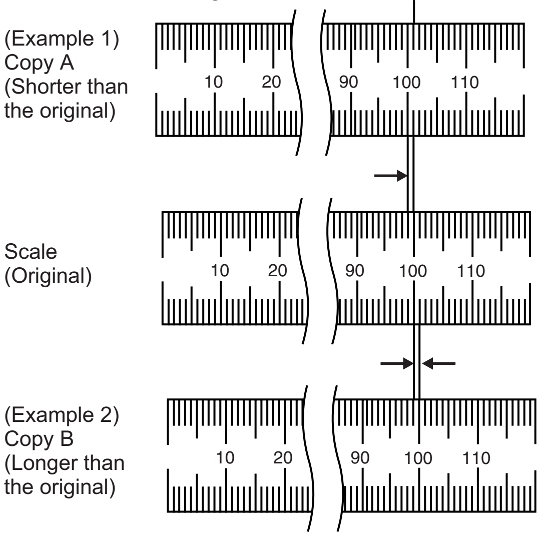
A : xx ; CCD(MAIN)
B : xx ; CCD(SUB)
C : xx ; SPF(MAIN)
D : xx ; SPF(SUB)

3) Make a normal copy and obtain the copy magnification ratio.

Press [CLOSE] key and shift from the simulation mode to the copy mode and make a copy.

Copy magnification ratio

$$= \frac{\text{(Original dimension – Copy dimension)}}{\text{Original dimension}} \text{ x 100 [\%]}$$



4) Check that the copy magnification ratio is within the specified range (100 ± 1.0%).

If the copy magnification ratio is within the specified range (100 ± 1.0%), the adjustment is completed. If the copy magnification ratio is not within the specified range, perform the following procedure.

5) Change the CCD (SUB) adjustment value of Simulation 48-1.

When the adjustment value is increased, the copy magnification ratio in the sub scanning direction is increased.

When the adjustment value is changed by 1, the copy magnification ratio is changed by about 0.1%.

Repeat the procedures 3) – 5) until the copy magnification ratio is within the specified range (100 ± 1.0%).

15 Scan image magnification ratio adjustment (RSPF mode) (Refer to the MX-RPX1 SM.)

15-A Scan image magnification ratio adjustment (Main scanning direction) (RSPF mode) (Refer to the MX-RPX1 SM.)

15-B Scan image magnification ratio adjustment (Sub scanning direction) (RSPF mode) (Refer to the MX-RPX1 SM.)

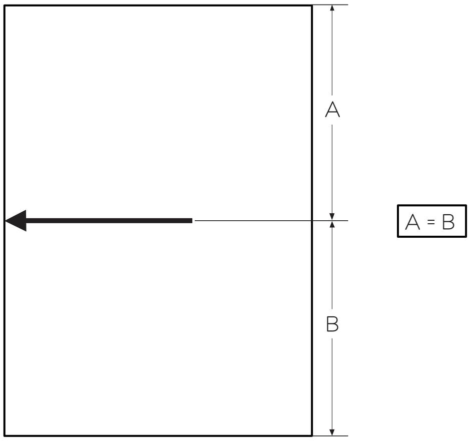
16 Scan image off-center adjustment

This adjustment is required in the following cases:

- When the scanner (reading) section is disassembled.
- When the scanner (reading) unit is replaced.
- When the RSPF section is disassembled.
- When the RSPF unit is installed.
- When the RSPF unit is replaced.
- When a U2 trouble occurs.
- When the scanner control PWB is replaced.
- When the EEPROM on the scanner control PWB is replaced.

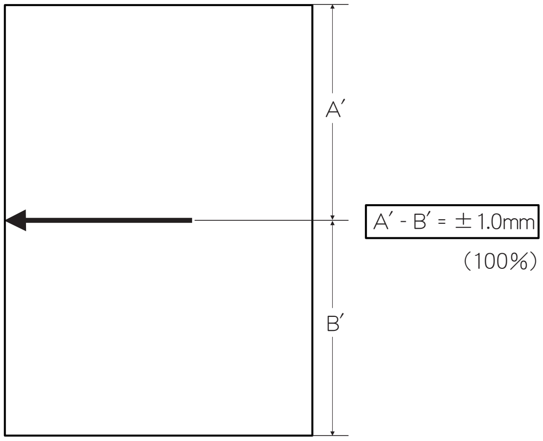
16-A Scan image off-center (Document table mode)

1) Make a copy of the adjustment chart (made by your self) in the adjustment mode (document table or RSPF).



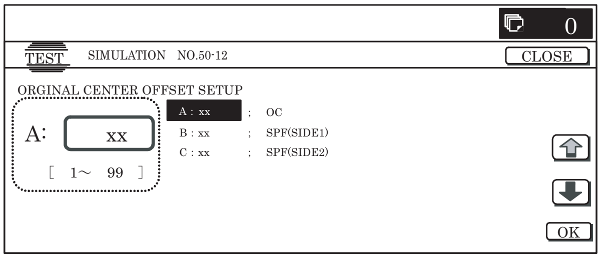
2) Check the copy image center position.

   If A – B = ± 1.0mm, the adjustment is not required.



   If the above condition is not satisfied, perform the following procedures.

3) Enter the simulation 50-12 mode.



0

TEST SIMULATION NO.50-12 CLOSE

ORGINAL CENTER OFFSET SETUP

A: xx

[1～ 99]

A : xx ; OC

B : xx ; SPF(SIDE1)

C : xx ; SPF(SIDE2)

OK

4) Select the adjustment mode OC with the scroll key.
5) Enter the adjustment value with 10-key, and press [OK] key.

   The entered value is set.

   When the set value is increased, the main scanning print position is shifted to the front side by 0.1mm.
6) Press [CLOSE] key and shift from the simulation mode to the copy mode and make a copy.

   Repeat the procedures of 2) – 6) until the above condition is satisfied.

16-B Scan image off-center (RSPF mode) (Refer to the MX-RPX1 SM.)

17 Print area (Void area) adjustment (Print engine section)

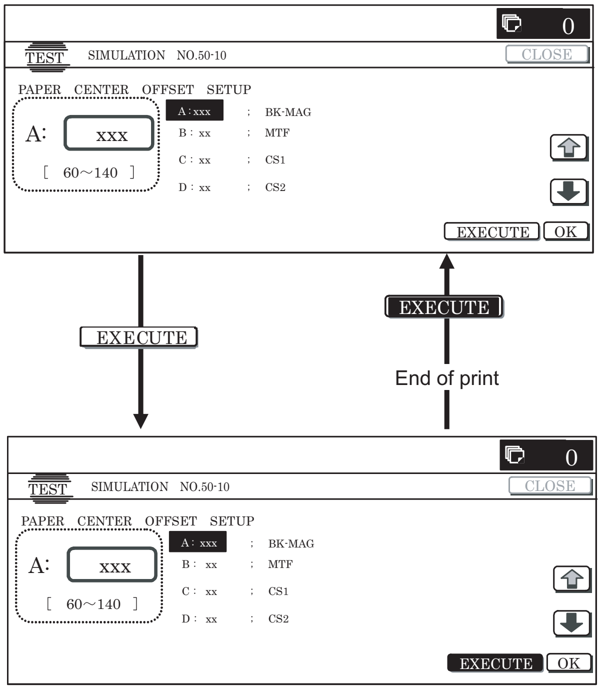
This adjustment is required in the following cases:

- When the LSU is replaced or removed.
- When the paper tray is replaced.
- When the paper tray section is disassembled.
- When the manual paper feed tray is replace.
- When the manual paper feed tray is disassembled.
- When the duplex section is disassembled.
- When the duplex section is installed or replaced.
- When the large capacity paper feed tray is installed or replace.
- When the large capacity paper feed tray section is disassembled.
- When the resist roller section is disassembled.
- When a U2 trouble occurs.
- When the PCU PWB is replaced.
- When the EEPROM on the PCU PWB is replaced.

(Caution)

Before executing this adjustment, be sure to execute ADJ 8 Print image magnification ratio adjustment (BK) (Main scanning direction) (Print engine section) in advance.

1) Enter the simulation 50-10 mode.



0

TEST SIMULATION NO.50-10 CLOSE

PAPER CENTER OFFSET SETUP

A: xxx

[60～140]

A : xxx ; BK-MAG

B : xx ; MTF

C : xx ; CS1

D : xx ; CS2

EXECUTE OK

0

TEST SIMULATION NO.50-10 CLOSE

PAPER CENTER OFFSET SETUP

A: xxx

[60～140]

A : xxx ; BK-MAG

B : xx ; MTF

C : xx ; CS1

D : xx ; CS2

EXECUTE OK

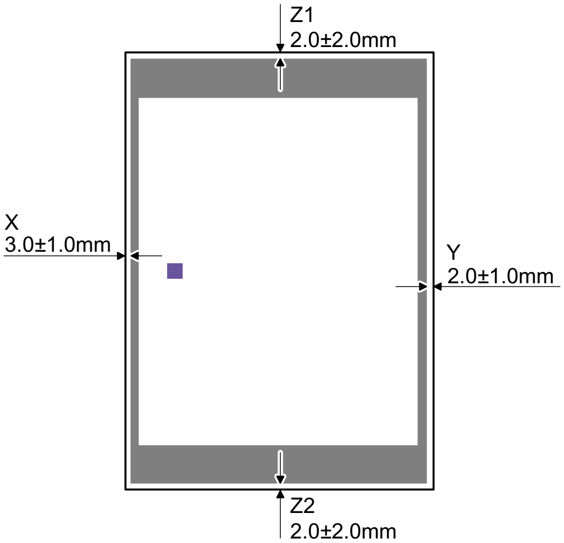
2) Set A4 (11 x 8.5) paper to all the trays, and select the set item J with the scroll key. Enter the value corresponding to the adjustment target paper feed tray.

3) Press [EXECUTE] key.

The adjustment pattern is printed.

4) Check the adjustment pattern to confirm that the items below are in the range of the standard values.

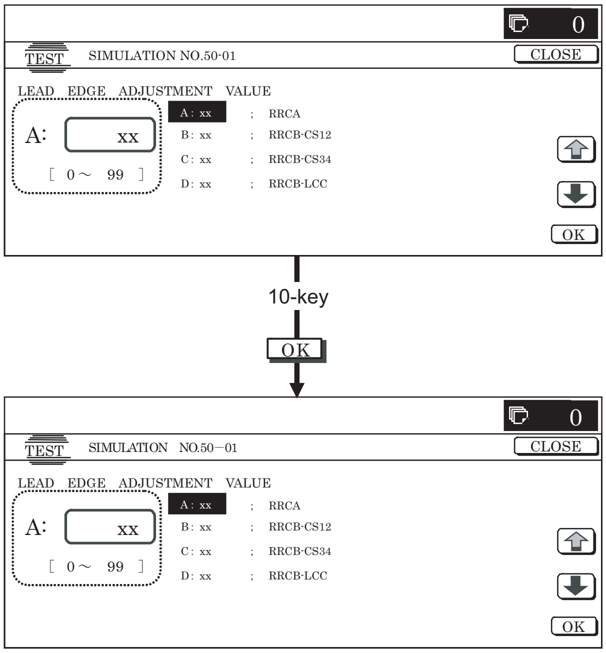
	Content	Standard adjustment value
X	Lead edge void area	3.0 ± 1.0mm
Y	Rear edge void area	2.0 ± 1.0mm
Z1/Z2	FRONT/REAR void area	2.0 ± 2.0mm



(Note) Feed paper from all the paper feed trays to confirm.

If the above condition is not satisfied, or if it is set to a desired condition, execute the simulation 50-1.

5) Enter the simulation 50-1 mode.



LEAD EDGE ADJUSTMENT VALUE

A: xx

[0～ 99]

A : xx ; RRCA
B : xx ; RRCB-CS12
C : xx ; RRCB-CS34
D : xx ; RRCB-LCC

6) Select the adjustment item with the scroll key, and enter the adjustment value and press [OK] key.

Display/ Item	Content		Adjustment range	Default value	Standard adjustment value
DENA	Void are amount adjustment	Lead edge void area adjustment	1 – 99	30	3.0 ± 1.0mm
DENB		Rear edge void area adjustment	1 – 99	20	2.0 ± 1.0mm
FRONT/ REAR		FRONT/ REAR void area adjustment	1 – 99	20	2.0 ± 2.0mm

When the adjustment value is increased, the void area is increased. When the adjustment value is decreased, the void area is decreased. When the adjustment value is changed by 1, the void area is changed by 0.1mm.

(Note)

The adjustment value and the actual void area are related as follows:

Adjustment value/10 = Actual void area

After execution of the above, perform procedures 1) – 4) to check that the void area is within the specified range.

Though the lead edge void area adjustment value is proper, if the lead edge void area is not within the specified range, change the adjustment value of RRCB-XXX of SIM 50-1.

Display item	Content			Adjustment range	Default value
RRCB-CS12	Image lead edge position adjustment value	Resist motor ON timing adjustment	Standard cassette	1 – 99	50
RRCB-CS34			Desk	1 – 99	50
RRCB-LCC			LCC	1 – 99	50
RRCB-MFT			Manual feed	1 – 99	50
RRCB-ADU			ADU	1 – 99	50

Repeat the above procedures until a satisfactory result is obtained.

18 Copy image position, image loss adjustment

18-A Copy image position, image loss adjustment (Document table mode)

This adjustment is required in the following cases:

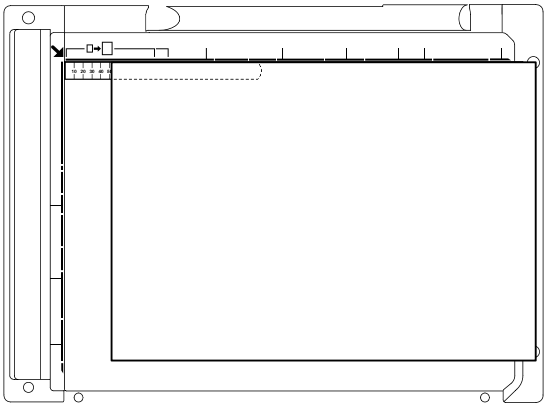
* When the scanner (reading) section is disassembled.
* When the scanner (reading) unit is replaced.
* When the LSU is replaced or removed.
* When the resist roller section is disassembled.
* When a U2 trouble occurs.
* When the PCU PWB is replaced.
* When the EEPROM on the PCU PWB is replaced.
* When the scanner control PWB is replaced.
* When the EEPROM on the scanner control PWB is replaced.

NOTE: Before executing this adjustment, be sure to confirm that the ADJ 17 Print area (Void area) adjustment (Print engine section) has been completed normally.

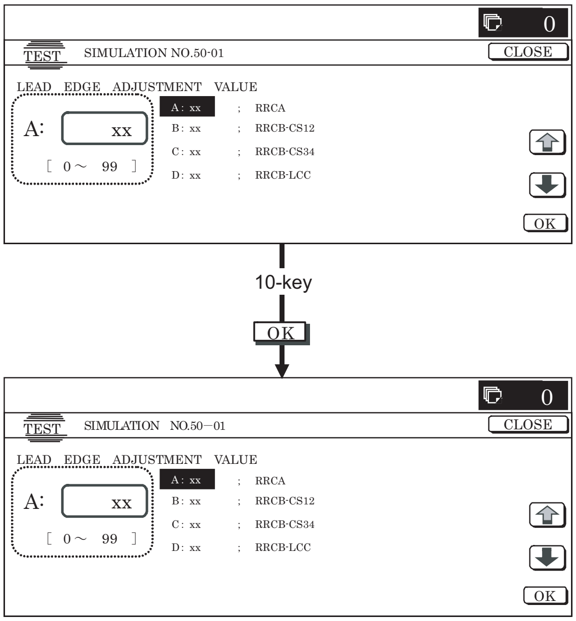
1) Place a scale on the document table as shown in the figure below.

Place a scale so that it is in parallel with the scanning direction and that its lead edge is in contact with the document guide plate.

Place white paper on the document table so that the scale lead edge can be seen.



2) Enter the simulation 50-1 mode.



TEST SIMULATION NO.50-01

LEAD EDGE ADJUSTMENT VALUE

A: xx [0～ 99]

A : xx ; RRCA

B : xx ; RRCB-CS12

C : xx ; RRCB-CS34

D : xx ; RRCB-LCC

TEST SIMULATION NO.50−01

LEAD EDGE ADJUSTMENT VALUE

A: xx [0～ 99]

A : xx ; RRCA

B : xx ; RRCB-CS12

C : xx ; RRCB-CS34

D : xx ; RRCB-LCC

3) Set RRCA, LEAD, and SIDE to the default values.

Item	Display item	Content			Adjustment range	Default value
A	RRCA	Image lead edge position adjustment value	Document lead edge reference position (OC)		0 – 99	50
B	RRCB-CS12		Resist motor ON timing adjustment	Standard cassette	1 – 99	50
C	RRCB-CS34			Desk	1 – 99	50
D	RRCB-LCC			LCC	1 – 99	50
E	RRCB-MFT			Manual feed	1 – 99	50
F	RRCB-ADU			ADU	1 – 99	50
G	LEAD	Image loss adjustment	Lead edge image loss adjustment		0 – 99	30
H	SIDE		Side image loss adjustment		0 – 99	20
I	DENA	Void area amount adjustment	Lead edge void area adjustment		1 – 99	30
J	DENB		Rear edge void area adjustment		1 – 99	20
K	FRONT/REAR		FRONT/REAR void area adjustment		1 – 99	20

4) Perform the image lead edge reference position adjustment.

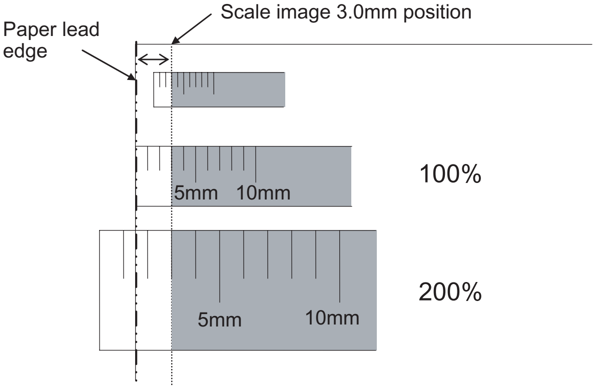
Press [CLOSE] key, and shift from the simulation mode to the copy mode and make a copy in 100% mode and in 200% mode.

When the adjustment value of RRCA is proper, the lead edge image from 3.0mm is not copied in either of 100% and 200% copy scale.

If not, change and adjust the RRCA value.

(Adjust so that the lead edge image from 3.0mm is not copied in either of different copy magnification ratios.)

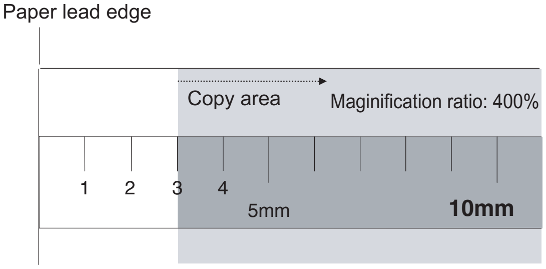
Repeat the above procedures until a satisfactory result is obtained.



5) Image loss adjustment

When the adjustment item of the image loss below is set to the default value, it is adjusted to the standard state.

If it is not in the above standard state, or when it is set to a desired value, change these adjustment items.



Void area: 3.0mm, Image loss: 3.0mm

Display/ Item	Content		Adjustment range	Default value	Standard adjustment value
LEAD	Image loss adjustment value	Lead edge image loss adjustment	0 – 99	30	3.0 ± 1.0mm
SIDE		Side image loss adjustment	0 – 99	20	2.0 ± 1.0mm

When the adjustment value is increased, the image loss is increased. When the adjustment value is decreased, the image loss is decreased.

When the adjustment value is changed by 1, the image loss is changed by 0.1mm.

18-B Copy image position, image loss adjustment (RSPF mode) (Refer to the MX-RPX1 SM.)

19 Print lead edge image position adjustment (Printer mode) (Print engine section)

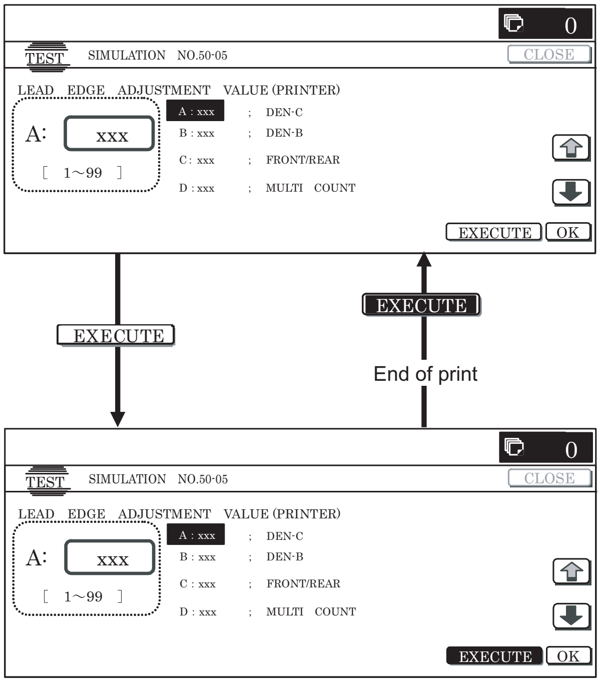
This adjustment is required in the following cases:

- When the resist roller section is disassembled.
- When the LSU is replaced or removed.
- When a U2 trouble occurs.
- When the PCU PWB is replaced.
- When the EEPROM on the PCU PWB is replaced.

(Caution)

This adjustment is performed by the user to increase the lead edge void area to greater than the standard value (3mm) in the printer mode.

1) Enter the simulation 50-05 mode.



SIMULATION NO.50-05

LEAD EDGE ADJUSTMENT VALUE (PRINTER)

A: xxx [1~99]

A : xxx ; DEN-C

B : xxx ; DEN-B

C : xxx ; FRONT/REAR

D : xxx ; MULTI COUNT

2) Select the set item E with the scroll key, and enter the value corresponding to the paper feed tray with A4 (11 x 8.5) paper in it.

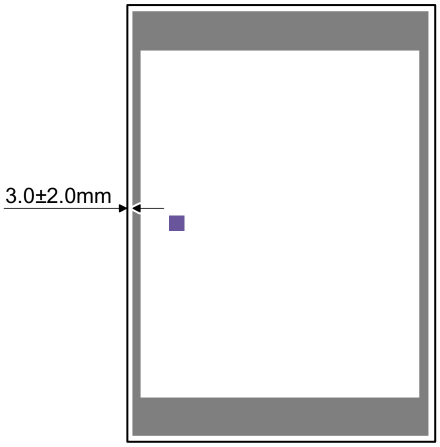
Display/Item			Content		Adjustment range		Default value	Standard adjustment value
A	DEN-C		Printer print image lead edge adjustment		1 – 99		30	3.0 ± 2.0mm
D	MULTI COUNT		Print quantity		1 – 999		1	—
E	PAPER	MFT	Cassette select	Manual feed	1 – 6	1	2 (CS1)	
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
F	DUPLEX	YES	Duplex print select	Select	0 – 1	0	1 (NO)	

3) Press [EXECUTE] key.

The adjustment pattern is printed.

4) Measure the distance from the paper lead edge the adjustment pattern to the image lead edge, and check to confirm that it is in the standard adjustment value range.

Standard adjustment value: 3.0 ± 2.0mm



If the above condition is not satisfied, perform the following procedures.

5) Select the adjustment target of the paper feed mode adjustment item DENC with the scroll key.

6) Change the adjustment value.

Enter the adjustment value and press [OK] or [EXECUTE] key.

When [EXECUTE] key is pressed, the adjustment pattern is printed.

When the adjustment value is increased, the distance from the paper lead edge to the image lead edge is increased. When the adjustment value is decreased, the distanced is decreased.

When the set value is changed by 1, the distance is changed by about 0.1mm.

Repeat the procedures 4) – 6) until the condition of 4) is satisfied.

20 Copy color balance/density adjustment

(1) Note before execution of the copy color balance/density adjustment

- After completion of this adjustment, the printer color balance/density adjustment must be executed.
- Requisite conditions before execution of the copy color balance/density adjustment

Before execution of the copy color balance/density adjustment, check to insure that the adjustments which affect the copy color balance/density adjustment have been completed.

The importance levels of them are shown below.

(The following items affect the copy color balance/density adjustment, and must be checked and adjusted before execution of the image quality adjustments.)

1) The following adjustment items must be adjusted properly.

Job No	Adjustment item			Simulation to be used
ADJ 5	Image density sensor, image registration sensor adjustment	ADJ 5A	Color image sensor calibration	44-13
		ADJ 5B	Color image density sensor, black image density sensor, image registration sensor adjustment	44-2
ADJ 6	Image skew adjustment (LSU (writing) unit)			64-1/61-4
ADJ 7	OPC drum phase adjustment	ADJ 7A	OPC drum phase adjustment (Auto adjustment)	50-22
		ADJ 7B	OPC drum phase adjustment (Manual adjustment)	44-31
ADJ 10	Image registration adjustment (Print engine section)	ADJ 10A	Image registration adjustment (Main scanning direction, sub scanning direction) (Auto adjustment)	50-22
		ADJ 10B	Image registration adjustment (Main scanning direction) (Manual adjustment)	50-20
		ADJ 10C	Image registration adjustment (Sub scanning direction) (Manual adjustment)	50-21

2) The set values of the following simulations must be set to the default values.

SIM No	Adjustment/setting item	Default value
46-1	A – U	50
46-2	A – L	50
46-10	A – O	500
46-16	A – O	500

3) The following items (correction functions) of SIM 44-1 must be set to ENABLE (default).

Display	Content	Set range	Default value
HV	Normal operation high-density process control YES/NO setting	Normal (Inhibit: 1: NO) Highlighted (Allow: 0: YES)	Allow
HT	Normal operation half-tone process control YES/NO setting		Allow
TC	Transfer output correction YES/NO setting		Allow
MD VG	Membrane decrease grid voltage correction YES/NO setting		Allow
MD LD	Membrane decrease laser power voltage correction YES/NO setting		Inhibit
MD EV	Membrane decrease environment grid voltage correction YES/NO setting		Allow
MD DL	Membrane decrease discharge light quantity correction YES/NO setting		Allow
MD DL EV	Membrane decrease environment discharge light quantity correction YES/NO setting		Inhibit
TN_HUM	Toner density humidity correction YES/NO setting		Allow
TN_AREA	Toner density area correction YES/NO setting		Allow
TN_LIFE	Toner density life correction YES/NO setting	Normal (Inhibit: 1: NO) Highlighted (Allow: 0: YES)	Allow
TN_COV	Toner density print rate correction YES/NO setting		Allow
TN_PROCON	Toner density process control correction YES/NO setting		Allow
TN_ENV	Toner density environment correction YES/NO setting		Allow
TN_DRIP	Toner density correction, unconditional supply YES/NO setting		Allow
TN_SPEND	Toner compulsory consumption mode YES/NO setting		Allow
PHT	1Pixel half-tone process control correction YES/NO setting		Inhibit
AR_AUTO	Auto resist adjustment YES/NO setting		Allow
AR_ERROR	Error check YES/NO setting during auto resist adjustment		Allow
DM_PHASE	Drum phase alignment YES/NO setting		Allow
SENSITIVITY	Toner density correction YES/NO setting		Inhibit
PRT_HT	Half tone process control printer correction feedback Enable/Disable setting		Allow

(The following items affect the copy color balance/density adjustment, but it is not required to adjust them frequently. When, however, a trouble occurs, check and adjust them.)

1) The following items must be adjusted properly.

Job No	Adjustment item			Simulation to be used
ADJ 1	Developing doctor gap adjustment			
ADJ 2	Developing roller main pole position adjustment			
ADJ 4	High voltage adjustment	ADJ 4A	Main charger grid voltage adjustment	8-2
		ADJ 4B	Developing bias voltage adjustment	8-1
		ADJ 4C	Transfer voltage adjustment	8-6
ADJ 12	Scan image focus adjustment (CCD unit position adjustment)			

(Relationship between the servicing job contents and the copy color balance/density adjustment)

Note that the preliminary jobs before execution of the copy color balance/density adjustment depend on the machine status and the servicing conditions.

Follow the flowchart of the copy color balance/density adjustment procedures depending on the actual conditions.

There are following four, major cases.

1) When installing the machine.
2) When the periodic maintenance is performed.
3) When a repair, an inspection, or a maintenance is performed. (When a consumable part is replaced.)
4) When a repair, an inspection, or a maintenance is performed. (Without replacement of a consumable part)

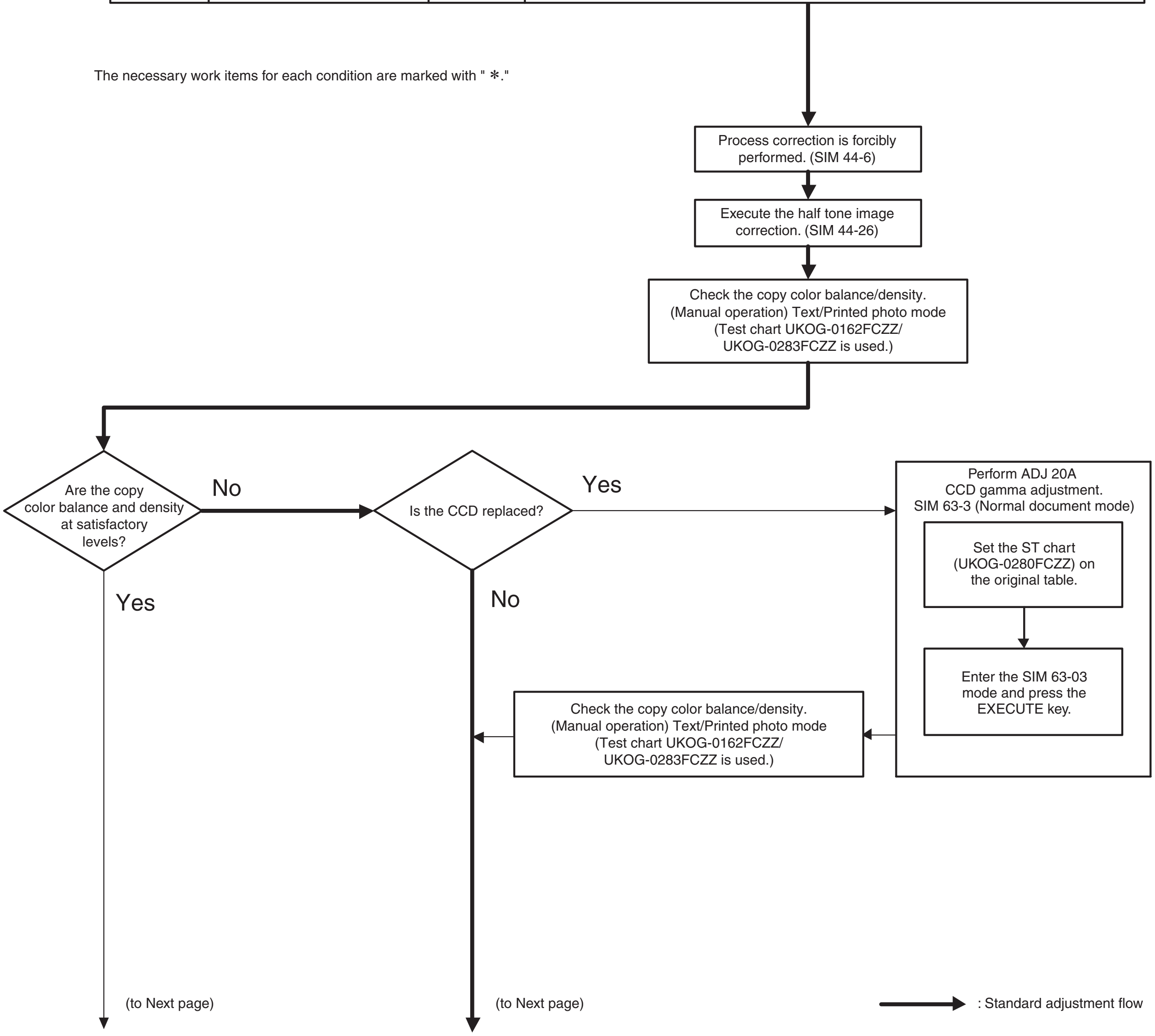
(2) Flowchart of the copy color balance/density adjustment procedures

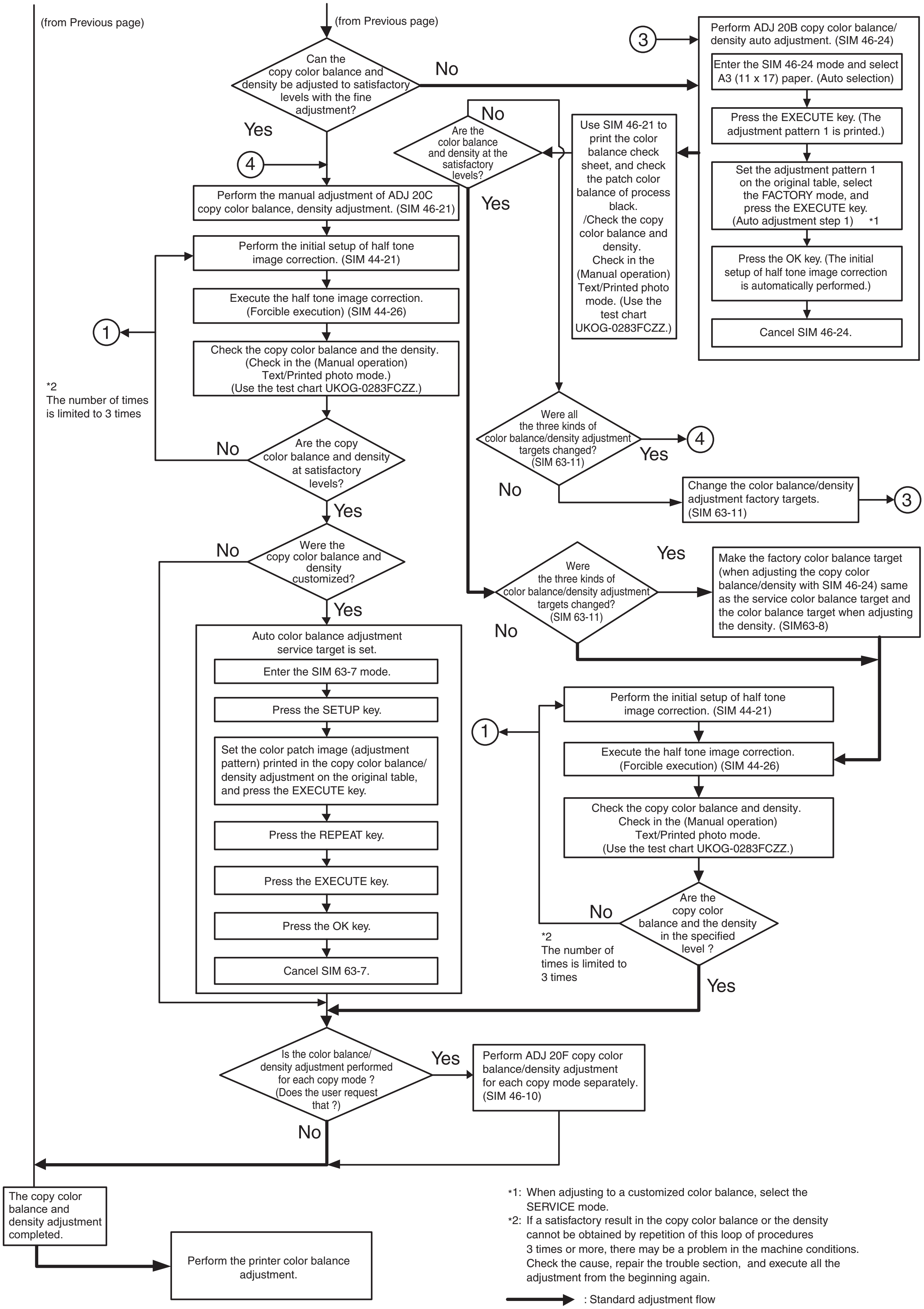
START

①'

JOB No	Work item	Simulation	When in repair, check/maintenance (with replacing consumable parts)					When in install/repair/check (without replacing consumable parts)
			After replacing OPC drum	After replacing developer drum	After replacing transfer belt	After replacement of the image density sensor	After cleaning scanner (reading) section	
	OPC drum counter clear	24-7	*					
	Developer counter clear	24-5		*				
ADJ 5A	Color image density sensor calibration	44-13				*		
ADJ 7	OPC drum phase adjustment	50-22 (44-31)	*					
ADJ 6	Image skew adjustment (LSU (writing) unit)	64-1/61-4	*					
ADJ 10	Image registration adjustment (Print engine section)	50-22 (50-20/ 50-21)	*					

The necessary work items for each condition are marked with " *."


Process correction is forcibly performed. (SIM 44-6)
Execute the half tone image correction. (SIM 44-26)
Check the copy color balance/density. (Manual operation) Text/Printed photo mode (Test chart UKOG-0162FCZZ/ UKOG-0283FCZZ is used.)
Are the copy color balance and density at satisfactory levels?
No
Yes
Is the CCD replaced?
Yes
No
Perform ADJ 20A CCD gamma adjustment. SIM 63-3 (Normal document mode)
Set the ST chart (UKOG-0280FCZZ) on the original table.
Enter the SIM 63-03 mode and press the EXECUTE key.
Check the copy color balance/density. (Manual operation) Text/Printed photo mode (Test chart UKOG-0162FCZZ/ UKOG-0283FCZZ is used.)
(to Next page)
(to Next page)
: Standard adjustment flow


(from Previous page)
(from Previous page)
Can the copy color balance and density be adjusted to satisfactory levels with the fine adjustment?
No
Yes
③
Perform ADJ 20B copy color balance/density auto adjustment. (SIM 46-24)
Enter the SIM 46-24 mode and select A3 (11 x 17) paper. (Auto selection)
Press the EXECUTE key. (The adjustment pattern 1 is printed.)
Set the adjustment pattern 1 on the original table, select the FACTORY mode, and press the EXECUTE key. (Auto adjustment step 1) *1
Press the OK key. (The initial setup of half tone image correction is automatically performed.)
Cancel SIM 46-24.
Use SIM 46-21 to print the color balance check sheet, and check the patch color balance of process black. /Check the copy color balance and density. Check in the (Manual operation) Text/Printed photo mode. (Use the test chart UKOG-0283FCZZ.)
Are the color balance and density at the satisfactory levels?
No
Yes
④
Perform the manual adjustment of ADJ 20C copy color balance, density adjustment. (SIM 46-21)
Perform the initial setup of half tone image correction. (SIM 44-21)
Execute the half tone image correction. (Forcible execution) (SIM 44-26)
①
Check the copy color balance and the density. (Check in the (Manual operation) Text/Printed photo mode.) (Use the test chart UKOG-0283FCZZ.)
*2 The number of times is limited to 3 times
Are the copy color balance and density at satisfactory levels?
No
Yes
Were all the three kinds of color balance/density adjustment targets changed? (SIM 63-11)
Yes
④
No
Change the color balance/density adjustment factory targets. (SIM 63-11)
③
Were the copy color balance and density customized?
No
Yes
Were the three kinds of color balance/density adjustment targets changed? (SIM 63-11)
Yes
Make the factory color balance target (when adjusting the copy color balance/density with SIM 46-24) same as the service color balance target and the color balance target when adjusting the density. (SIM63-8)
No
Auto color balance adjustment service target is set.
Enter the SIM 63-7 mode.
Press the SETUP key.
Set the color patch image (adjustment pattern) printed in the copy color balance/density adjustment on the original table, and press the EXECUTE key.
Press the REPEAT key.
Press the EXECUTE key.
Press the OK key.
Cancel SIM 63-7.
①
Perform the initial setup of half tone image correction. (SIM 44-21)
Execute the half tone image correction. (Forcible execution) (SIM 44-26)
Check the copy color balance and density. Check in the (Manual operation) Text/Printed photo mode. (Use the test chart UKOG-0283FCZZ.)
Are the copy color balance and the density in the specified level ?
No
Yes
*2 The number of times is limited to 3 times
Is the color balance/density adjustment performed for each copy mode ? (Does the user request that ?)
Yes
Perform ADJ 20F copy color balance/density adjustment for each copy mode separately. (SIM 46-10)
No
The copy color balance and density adjustment completed.
Perform the printer color balance adjustment.

*1: When adjusting to a customized color balance, select the SERVICE mode.

*2: If a satisfactory result in the copy color balance or the density cannot be obtained by repetition of this loop of procedures 3 times or more, there may be a problem in the machine conditions. Check the cause, repair the trouble section, and execute all the adjustment from the beginning again.

⟶ : Standard adjustment flow

(3) Copy color balance and density check

(Note)

Before checking the coy color balance and density, be sure to execute the following jobs.

- * Execute the high density image correction (Process correction) forcibly. (SIM 44-6)
- * Execute the half-tone image correction forcibly. (SIM 44-26)

(Method)

Make a copy of the gray test chart (UKOG-0162FCZZ) and a copy of the servicing color test chart (UK0G-0283FCZZ), and check that they are proper.

a. Note for execution of the color balance and density check in the color copy mode

To check the copy color balance and density, use the gray test chart (UKOG-0162FCZZ) and the servicing color test chart (UK0G-0283FCZZ). Set the copy density level to "3" in the Text/Printed Photo mode (Manual), and make a copy.

At that time, all the color balance adjustments in the user adjustment mode must be set to the default (center).

In addition, be sure to use the specified paper for color.

b. Note for checking the monochrome copy mode density

To check the density, use the gray chart (UKOG-0162FCZZ). Set the copy density level to "Manual 3" in the Text/Printed Photo mode (Manual).

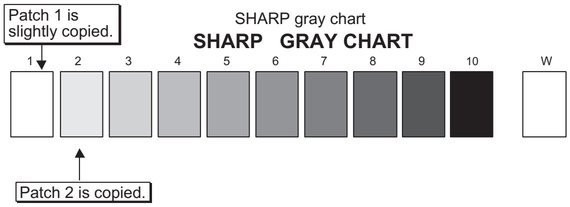
In addition, all the color balance adjustments in the user adjustment mode must be set to the default (center).

- Check with the gray test chart (UKOG-0162FCZZ)

In the copy density check with the gray test chart, check to insure the following conditions.

NOTE: For the color (gray) balance, use the servicing color test chart (UKOG-0283FCZZ) to check.

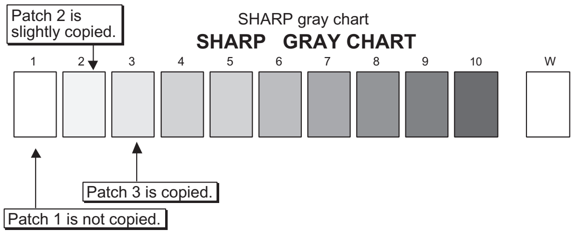
(Color copy)



Patch 1 is slightly copied.

Patch 2 is copied.

(Black-and-white copy)



Patch 2 is slightly copied.

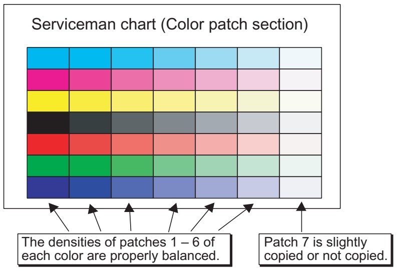
Patch 3 is copied.

Patch 1 is not copied.

- Check with the servicing color test chart (UK0G-0283FCZZ)

In the copy color balance check with the servicing color test chart, check to insure the following conditions.

(Color copy)



The densities of patches 1 – 6 of each color are properly balanced.

Patch 7 is slightly copied or not copied.

20-A CCD gamma adjustment (CCD calibration) (Normal document copy mode)

This adjustment is required in the following cases:

- * When the CCD unit is replaced.
- * When a U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.

(1) Note before adjustment

1) Check that the table glass, No. 1, 2, 3 mirrors, and the lens surface are free from dirt and dust. (If there is some dust and dirt, wipe and clean with alcohol.

2) Check to confirm that the patches in BK1 and BK2 arrays of the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) are free from dirt and scratches.

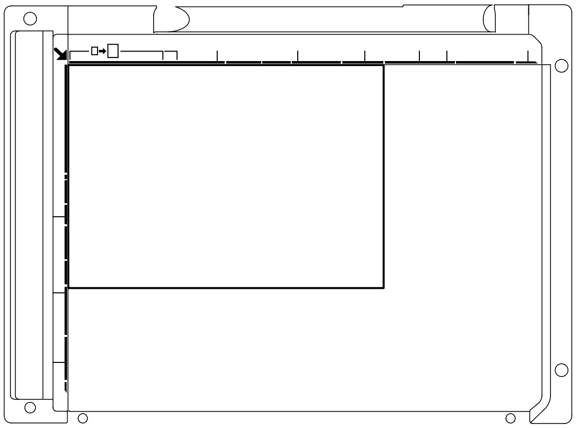
If they are dirty, clean them.

If they are scratched or streaked, replace with new one.

(2) Adjustment procedures

1) Set the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) to the reference position on the left rear frame side of the document table.

Set the chart so that the lighter density side of the patch is on the left side.



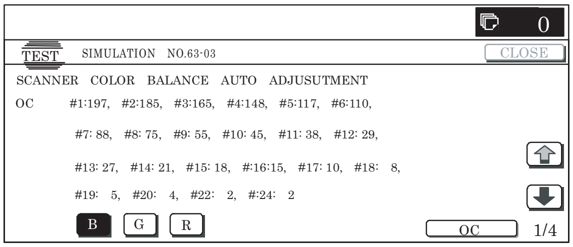
If the SIT chart is not available, execute SIM 63-5 to set the CCD gamma to the default. In this case, however, the adjustment accuracy is lower when compared with the adjustment method using the SIT chart.

NOTE:

- Check to insure that the SIT chart (UKOG-0280FCZZ or UKOG-0280FCZ1) is in close contact with the document table.
- UKOG-0280FCZZ is equivalent to UKOG-0280FCZ1.

2) Enter the SIM 63-03 mode and press [EXECUTE] key.

The automatic adjustment is started. During the adjustment, [EXECUTE] key is highlighted. After completion of the adjustment, [EXECUTE] key returns to the normal display.



```
SIMULATION   NO.63-03
SCANNER  COLOR  BALANCE  AUTO  ADJUSUTMENT
OC        #1:197,  #2:185,  #3:165,  #4:148,  #5:117,  #6:110,
           #7: 88,  #8: 75,  #9: 55,  #10: 45,  #11: 38,  #12: 29,
           #13: 27,  #14: 21,  #15: 18,  #:16:15,  #17: 10,  #18:  8,
           #19:  5,  #20:  4,  #22:  2,  #:24:  2
```

NOTE:

Since the SIT chart (UKOG-0280FCZZ) is easily discolored by sunlight (especially ultraviolet rays) and humidity and temperature, put it in a bag such as a clear file) and store in a dark place of low temperature and low humidity.

20-B Copy color balance adjustment (Auto adjustment)

This adjustment is required in the following cases:

- * When a consumable part (developer, OPC drum, transfer belt) is replaced.
- * When the CCD unit is replaced.
- * When a U2 trouble occurs.
- * When the MFP PWB is replaced.
- * When the EEPROM on the MFP PWB is replaced.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.

a. General

The color balance adjustment (auto adjustment) is used to adjust the copy density of Cyan, Magenta, Yellow, and Black with SIM 46-24 or the user program automatically.

(When this adjustment is executed, the color balance adjustments of all the copy modes are revised.)

There are following two modes in the auto color balance adjustment.

1) Auto color balance adjustment by the serviceman (SIM 46-24 is used.)
2) Auto color balance adjustment by the user (The user program mode is used.) (The color balance target is the service target.)

   The auto color balance adjustment by the user is provided to reduce the number of service calls.

   If the copy color balance is lost for some reasons, the user can use this color balance adjustment to recover the balance.

   When, however, the machine has a fatal problem or when the machine environment is greatly changed, this function does not work effectively.

   On the other hand, the auto color balance adjustment by the serviceman functions to recover the normal color balance though the machine environment is greatly changed. If the machine has a fatal problem, repair and adjust it for obtaining the normal color balance.

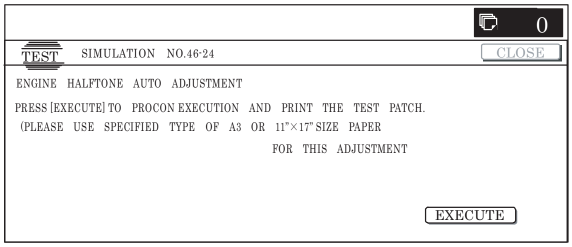
   To perform the adjustment, the above difference must be fully understood.

b. Note for executing the color balance adjustment (Auto adjustment)

1) The print engine section must have been adjusted properly.
2) The CCD gamma adjustment must have been adjusted properly.
3) Be sure to use the specified paper for color.
4) Before execution of the image quality check and the image quality adjustment, be sure to execute the following corrections forcibly to set the image forming section to the optimum state.
   - * Execute the high density image correction (Process correction) forcibly. (SIM44-6)
   - * Execute the half tone image correction forcibly. (SIM 44-26)

c. Adjustment procedure (Auto color balance adjustment by the serviceman)

1) Enter the SIM 46-24 mode.



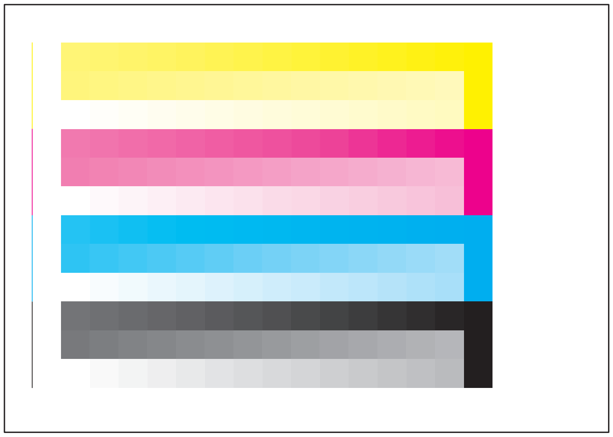
ENGINE HALFTONE AUTO ADJUSTMENT

PRESS [EXECUTE] TO PROCON EXECUTION AND PRINT THE TEST PATCH.
(PLEASE USE SPECIFIED TYPE OF A3 OR 11"×17" SIZE PAPER
FOR THIS ADJUSTMENT

2) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

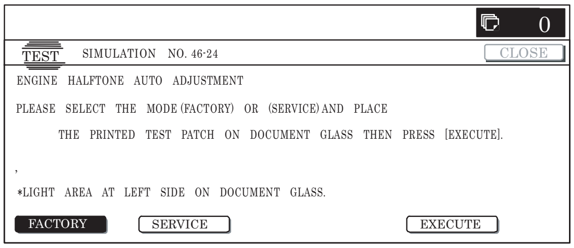
   The color patch image (adjustment pattern) is printed out.
3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.

   Place the printed color patch image (adjustment pattern) paper so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern) paper.



4) Press [FACTORY] key on the operation panel, and press [EXECUTE] key.

   When the color balance is customized with the manual color balance adjustment (SIM 46-21) according to the user's request and the color balance is registered as the service target with SIM 63-7, if the color balance is adjusted to that color balance, select the service target.



ENGINE HALFTONE AUTO ADJUSTMENT

PLEASE SELECT THE MODE (FACTORY) OR (SERVICE) AND PLACE
THE PRINTED TEST PATCH ON DOCUMENT GLASS THEN PRESS [EXECUTE].

*LIGHT AREA AT LEFT SIDE ON DOCUMENT GLASS.

   The copy color balance adjustment (step 1) is automatically executed to print the color balance check patch image. Wait until the operation panel shown in procedure 5) is displayed.

   Remark:

   (Descriptions on FACTORY key and SERVICE key in the color balance auto adjustment menu.)

   There are two kinds of the gamma target for the color balance auto adjustment; Factory and Service.

   FACTORY key and SERVICE key are used to select one of the above two.

   Factory target color balance: Standard color balance (It can be selected from the three kinds of fixed color balances with SIM 63-11.)

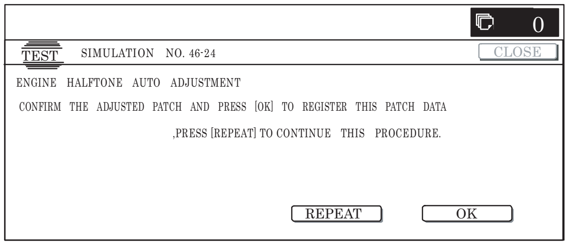
   Service target color balance: The color balance can be customized according to the user's request. (Variable)

   When shipping, the service target gamma data and the factory target gamma data are the same. Both are set to the standard color balance when shipping.

   For the service target, the customized color balance gamma can be registered with SIM 63-7.

5) Press [OK] key on the operation panel.

According to data of this adjustment, the initial setting of the half tone image correction is performed.



SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

CONFIRM THE ADJUSTED PATCH AND PRESS [OK] TO REGISTER THIS PATCH DATA

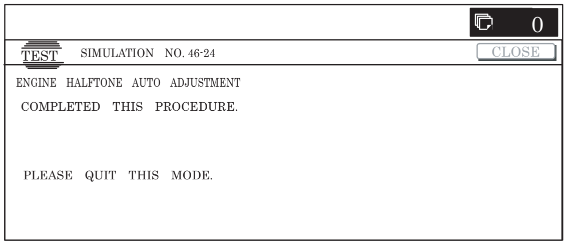
,PRESS [REPEAT] TO CONTINUE THIS PROCEDURE.

Remark:

After pressing [OK] key, the initial setting of the half tone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON." is displayed. This operation takes several minutes.

After completion of the operation, "Please quit this mode" is displayed.

Do not cancel the simulation until "Please quit this mode" is displayed.



SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

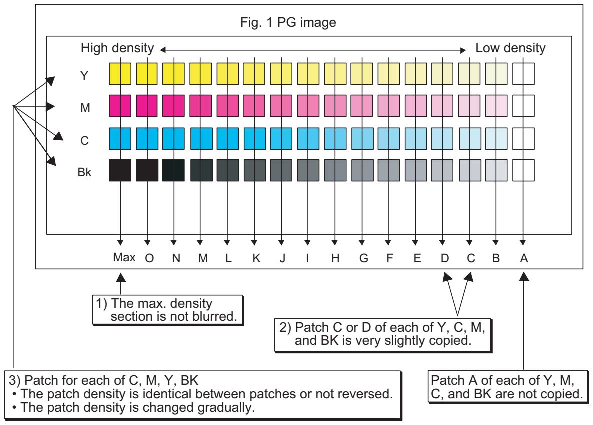
COMPLETED THIS PROCEDURE.

PLEASE QUIT THIS MODE.

6) Check the color balance and density.

(Method 1)

Check to insure that the printed color balance check patch image is within the following specifications.



1) The max. density section is not blurred.

2) Patch C or D of each of Y, C, M, and BK is very slightly copied.

3) Patch for each of C, M, Y, BK
- The patch density is identical between patches or not reversed.
- The patch density is changed gradually.

Patch A of each of Y, M, C, and BK are not copied.

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

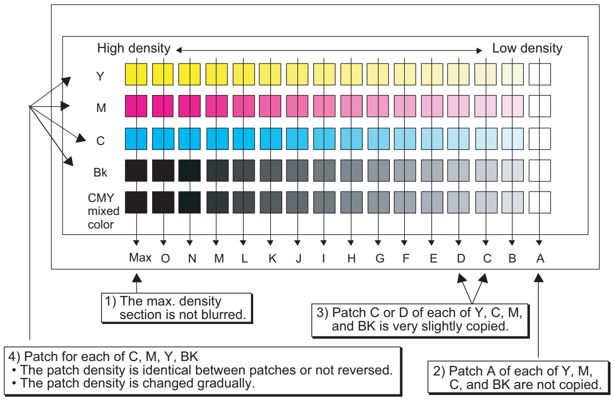
The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

(Method 2)

By printing the color balance adjustment sheet with SIM 46-21 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.



1) The max. density section is not blurred.

3) Patch C or D of each of Y, C, M, and BK is very slightly copied.

4) Patch for each of C, M, Y, BK
- The patch density is identical between patches or not reversed.
- The patch density is changed gradually.

2) Patch A of each of Y, M, C, and BK are not copied.

(Method 3)

Use the servicing color test chart (UK0G-0283FCZZ) in the Text/Printed Photo mode (Manual) to check the copy color balance and density. (Refer to the item of the copy color balance and density check.)

When satisfactory color balance and density are not obtained from the automatic adjustment by selecting the factory target in procedure 4), change the factory color balance target with SIM 63-11 and repeat the procedures from 1).

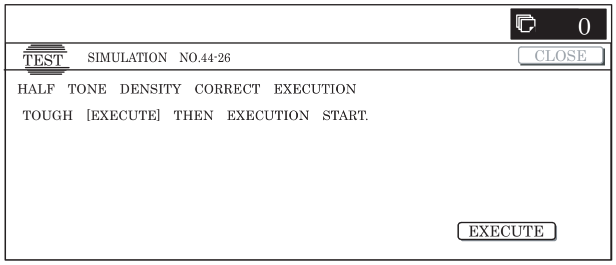
If a satisfactory result is not obtained with the above procedure, perform the manual color balance adjustment (ADJ 20C).

Also when the service target is selected in procedure 4) to execute the automatic adjustment and a satisfactory result is not obtained, perform the manual color balance adjustment (ADJ 20C).

7) Use SIM 44-26 to execute the half tone image correction. (Forcible execution)

Enter the SIM 44-26 mode and press [EXECUTE] key.

[EXECUTE] key is highlighted and the operation is started.



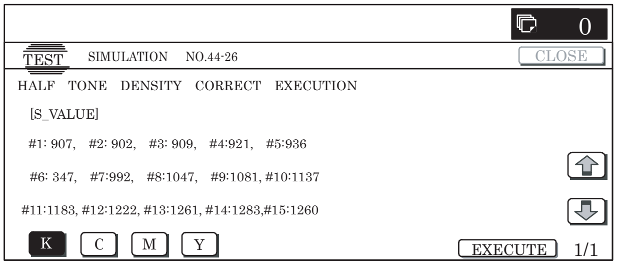
SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

TOUGH [EXECUTE] THEN EXECUTION START.

It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))



SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

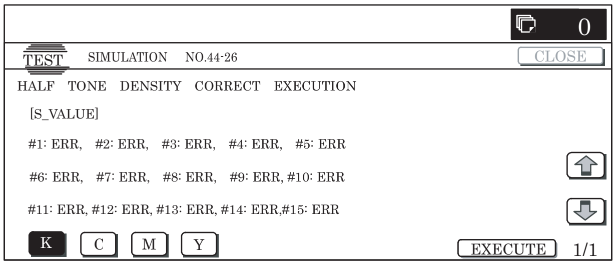
[S_VALUE]

#1: 907, #2: 902, #3: 909, #4:921, #5:936

#6: 347, #7:992, #8:1047, #9:1081, #10:1137

#11:1183, #12:1222, #13:1261, #14:1283,#15:1260

(Abnormal end (Auto transition))


TEST SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

[S_VALUE]

#1: ERR, #2: ERR, #3: ERR, #4: ERR, #5: ERR

#6: ERR, #7: ERR, #8: ERR, #9: ERR, #10: ERR

#11: ERR, #12: ERR, #13: ERR, #14: ERR,#15: ERR

0
CLOSE
K
C
M
Y
EXECUTE
1/1

After completion of the operation, the simulation is canceled.

8) Use the servicing color test chart (UK0G-0283FCZZ) in the Text/Photo mode (Manual) to check the copy color balance/density. (Refer to the item of the copy color balance/density check.)

If the copy color balance and density are not satisfactory, perform the following procedures.

9) Execute the initial setting of the half tone image correction. (SIM 44-21)

10) Execute the half tone image correction. (Forcible execution) (SIM44-26)

11) Use the servicing color test chart (UK0G-0283FCZZ) in the Text/Printed Photo mode (Manual) to check the copy color balance/density. (Refer to the item of the copy color balance/density check.)

Repeat the procedures 9) – 11) until a satisfactory result is obtained.

However, the number of times of repeat is limited to 3 times. If the copy color balance and density are not adjusted to the specified level by repeating the procedures 3 times, there may be another cause.

Troubleshoot the cause and repair or perform proper treatments, and try all the procedures of the print image adjustment from the beginning.

If the automatic adjustment cannot obtain satisfactory results of the copy color balance and density, use SIM 46-21 (ADJ M19C) (Manual adjustment).

20-C Copy color balance adjustment (Manual adjustment)

This adjustment is required in the following cases:

- When a consumable part (developer, OPC drum, transfer belt) is replaced.
- When the CCD is replaced.
- When a U2 trouble occurs.
- When the MFP PWB is replaced.
- When the EEPROM on the MFP PWB is replaced.
- When the scanner control PWB is replaced.
- When the EEPROM on the scanner control PWB is replaced.

a. General

The color balance adjustment (Manual adjustment) is used to adjust the copy density (15 pts for each color) of CMYK according to a request from the user for changing (customizing) the color balance because the automatic adjustment stated above is resulted in an unsatisfactory result or a fine adjustment is required.

In this manual adjustment, adjust only the color patch which could not adjusted properly in the automatic adjustment.

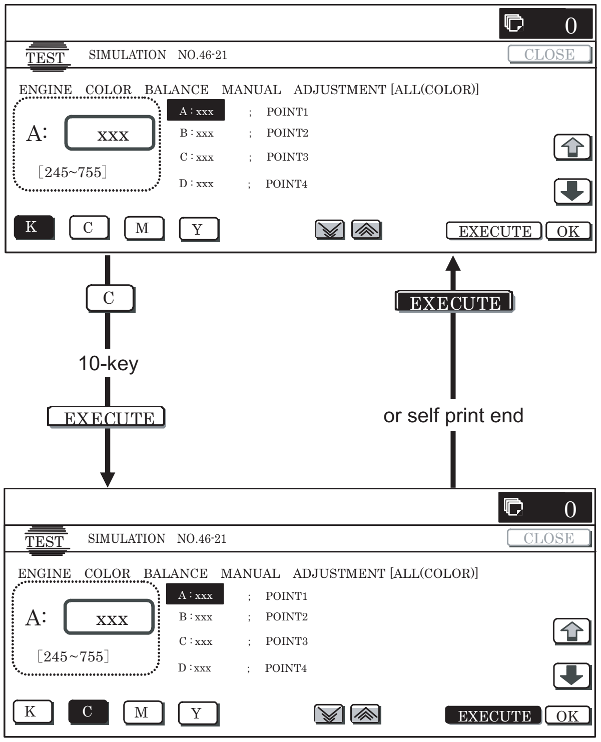
If the color balance is improper, execute the automatic color balance adjustment in advance, and execute this adjustment for better efficiency.

b. Note for the color balance adjustment (Manual adjustment)

1) The print engine section must have been adjusted properly.
2) The CCD gamma adjustment must have been adjusted properly.
3) Set the color patch image adjustment patter on the document table, and place 5 sheet of white paper on it.
4) Be sure to use the specified paper for color.
5) Before execution of the image quality check and adjustment, be sure to execute the following corrections to set the image forming section to the optimum state.
   - * Execute the high density image correction (process correction) forcibly. (SIM 44-6)
   - * Execute the half tone image correction forcibly. (SIM 44-26)

c. Adjustment procedure

1) Enter the SIM 46-21 mode.


TEST SIMULATION NO.46-21

ENGINE COLOR BALANCE MANUAL ADJUSTMENT [ALL(COLOR)]

A: xxx [245~755]

A : xxx ; POINT1

B : xxx ; POINT2

C : xxx ; POINT3

D : xxx ; POINT4

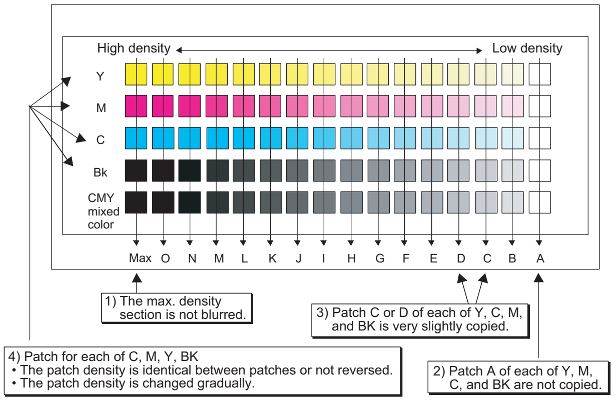
0
CLOSE
K
C
M
Y
EXECUTE
OK
C
10-key
EXECUTE
EXECUTE
or self print end

2) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

The color balance adjustment pattern is printed.

3) Check that the following specification is satisfied or the color balance is satisfactory.

If not, execute the following procedures.


High density
Low density
Y
M
C
Bk
CMY mixed color
Max
O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
1) The max. density section is not blurred.
3) Patch C or D of each of Y, C, M, and BK is very slightly copied.
4) Patch for each of C, M, Y, BK
• The patch density is identical between patches or not reversed.
• The patch density is changed gradually.
2) Patch A of each of Y, M, C, and BK are not copied.

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

When, however, the color balance is adjusted according to a request from the user, there is no need to set to the standard color balance stated above.

4) Select the color to be adjusted with the color select key, and select the adjustment point with the scroll key.

5) Enter the adjustment value with 10-key and press [OK] key.

The adjustment value is set in the range of 245 – 755 (1 – 999). When SIM 46-24 is used to adjust the automatic color balance and density, all the set values of this simulation are set to 500.

To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.

Repeat procedures of 2) – 5) until the condition of 3) is satisfied.

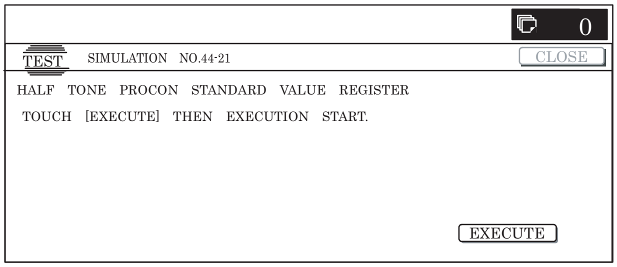
When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A – O to a same level collectively.

Then, adjust each patch density individually. This is an efficient way of adjustment.

Referring to the black and gray patches, adjust so that each process (CMY) black/gray patch color balance of A – O approaches the black/gray patch level as far as possible.

6) Make a copy of the servicing color test chart (UK0G-0283FCZZ) and a user's document according to necessity in the normal copy mode, the text/Printed Photo mode (Manual) to check the adjustment result. (Refer to the item of the copy color balance/density check.)

7) Execute SIM 44-21. (Execute the initial setting of the half tone image correction.)



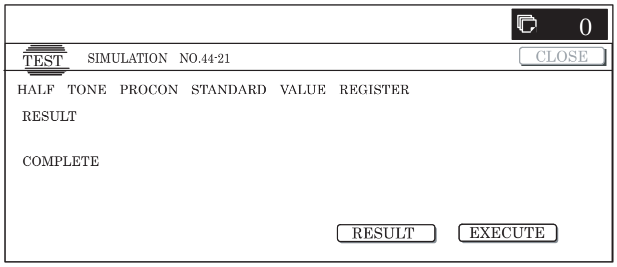
SIMULATION NO.44-21

HALF TONE PROCON STANDARD VALUE REGISTER

TOUCH [EXECUTE] THEN EXECUTION START.

It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))



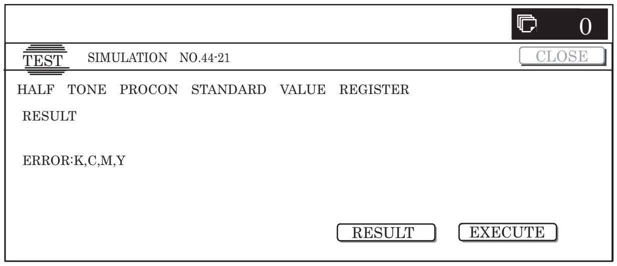
SIMULATION NO.44-21

HALF TONE PROCON STANDARD VALUE REGISTER

RESULT

COMPLETE

(Abnormal end (Auto transition))



SIMULATION NO.44-21

HALF TONE PROCON STANDARD VALUE REGISTER

RESULT

ERROR:K,C,M,Y

After completion of the operation, cancel the simulation.

This procedure is to save the copy color balance adjustment data as the reference data for the half tone correction.

Immediately after execution of ADJ 20C (Color balance adjustment, Manual) with SIM 46-21, be sure to execute this procedure.

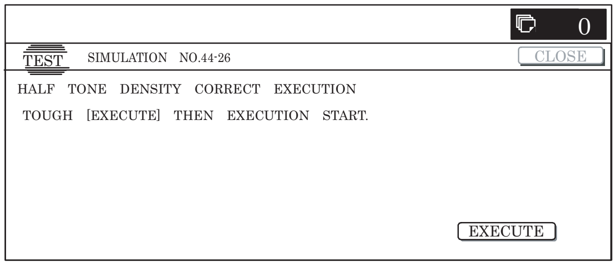
When ADJ 20B (Color balance adjustment, Auto) is executed with SIM 46-24, this procedure is automatically executed.

When [EXECUTE] key is pressed, it is highlighted and the operation is started.

8) Execute SIM 44-26 to perform the half tone image correction. (Forcible execution)

Enter the SIM 44-26 mode and press [EXECUTE] key.

[EXECUTE] key is highlighted and the operation is started.



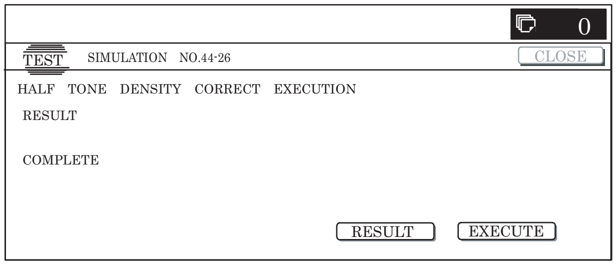
SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

TOUGH [EXECUTE] THEN EXECUTION START.

It takes several minute to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))



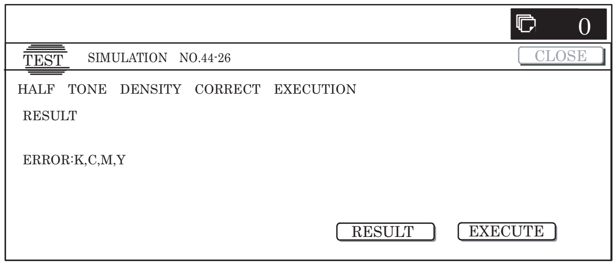
SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

RESULT

COMPLETE

(Abnormal end (Auto transition))



SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

RESULT

ERROR:K,C,M,Y

After completion of the operation, cancel the simulation.

9) Make a copy of the servicing color test chart (UK0G-0283FCZZ) and a user's document according to necessity in the Text/Printed Photo mode (Manual) and check the adjustment result again. (Refer to the item of the copy color balance/density check.)

   If the copy color balance and density are not in the specified level, repeat procedures of 7) – 9) until they are in the specified range.

   The number of repeat is, however, limited to 3 times.

   If the copy color balance and density are not adjusted to the specified level by repeating the procedures 3 times, there may be another cause.

   Troubleshoot the cause, and repair or perform proper treatments, and try all the procedures of the print image adjustment from the beginning.

   (NOTE)

   If the color balance is customized, use SIM 63-7 to register the color balance as the service target.

   If the color balance is not customized, this procedure is not required.

   If the customized color balance is registered as the service target, the automatic color balance adjustment can be made in the next color balance adjustment.

   In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode to make an adjustment to the similar color balance as the registered color balance.

(Auto color balance adjustment target gamma setting)

a. General

When the automatic color balance adjustment is executed, a certain color balance (gamma) is used as the target.

There are following three kinds of the target.

- Factory color balance (gamma) target
- Service color balance (gamma) target
- User color balance (gamma) target

In the above three, only the service color balance target can be set to a desired level.

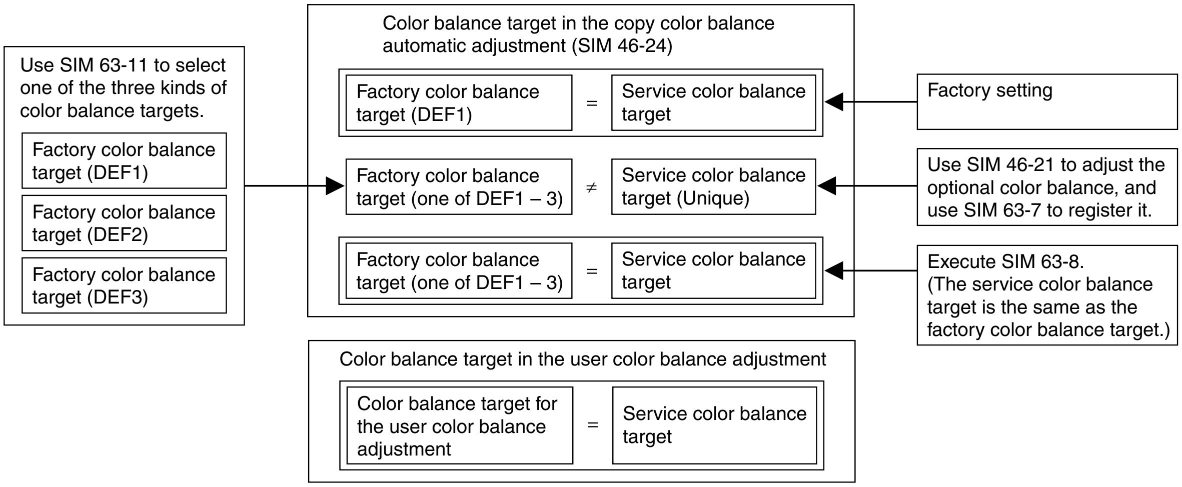
This adjustment is required in the following cases:

* When the copy color balance/density adjustment (manual adjustment) is executed with SIM 46-21).
* When a U2 trouble occurs.
* When the MFP PWB is replaced.
* When the EEPROM on the MFP PWB is replaced.
* When the scanner control PWB is replaced.
* When the EEPROM on the scanner control PWB is replaced.
* When the user requests for customizing the color balance.
* When the service color balance target gamma is judged as improper.

- Each color balance target for the copy color balance adjustment

Kind		Descriptions
A	Factory color balance (gamma) target	There are three kinds of the color balance target, and each of them is specified according to the machine design. Use SIM 63-11 to select one of them as the factory target. The default setting (factory setting) is the color balance (DEF1) which emphasizes color reproduction.
B	Service color balance (gamma) target	This target is used when the user requests to customize the color balance to user's desired level. In advance, the user's unique color balance must be registered as the service color balance target. The above registration (setting) is made by the serviceman with SIM 46-21 to adjust the color balance and with SIM 63-7 to register it. This color balance target is used when the user executes the color balance adjustment. When, therefore, the service color balance target is changed, the color balance target of the user's color balance adjustment is also changed. When, however, SIM 63-8 is executed, the color balance is set to the factory color balance target set with SIM 63-11. The default setting (factory setting) of the color balance is same as the factory color balance target. (Emphasized on color reproduction (DEF1)) If the user does not request for customizing the color balance, be sure to use SIM 63-8 to set the color balance to the factory color balance target.
C	User color balance (gamma) target	Same color balance as the service color balance (gamma) target When the service color balance target is changed, this color balance target is also changed accordingly.

- Relationship between the factory target and the service target and the color balance target for the user color balance adjustment in the copy color balance adjustment (SIM 46-24)


Use SIM 63-11 to select one of the three kinds of color balance targets.
Factory color balance target (DEF1)
Factory color balance target (DEF2)
Factory color balance target (DEF3)
Color balance target in the copy color balance automatic adjustment (SIM 46-24)
Factory color balance target (DEF1)
=
Service color balance target
Factory color balance target (one of DEF1 – 3)
≠
Service color balance target (Unique)
Factory color balance target (one of DEF1 – 3)
=
Service color balance target
Factory setting
Use SIM 46-21 to adjust the optional color balance, and use SIM 63-7 to register it.
Execute SIM 63-8. (The service color balance target is the same as the factory color balance target.)
Color balance target in the user color balance adjustment
Color balance target for the user color balance adjustment
=
Service color balance target

- Factory target in the copy color balance adjustment (SIM 46-24)

  By use of SIM 63-11, one of the following color balances can be set as the factory color balance target.

  Each of the three color balances cannot be changed. (Fixed)

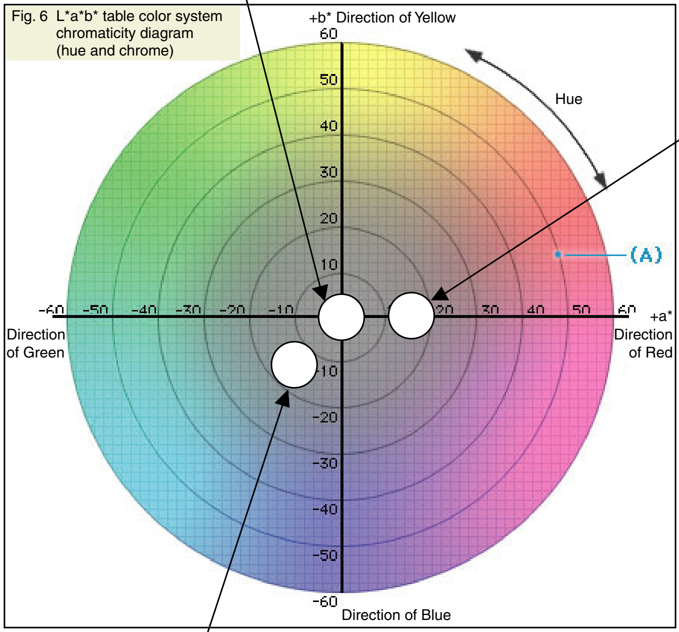


Fig. 6 L*a*b* table color system chromaticity diagram (hue and chrome)

SIM63-8

Factory color balance target (DEF2)

Factory color balance target (DEF2) = Service color balance target/Color balance target for the user color balance adjustment

SIM63-8

Factory color balance target (DEF1)

Factory color balance target (DEF1) = Service color balance target/Color balance target for the user color balance adjustment

Factory color balance target (DEF3)

Factory color balance target (DEF3) = Service color balance target/Color balance target for the user color balance adjustment

SIM63-8

DEF1	Color balance with emphasis on color reproduction (factory setting)	Default
DEF2	Color balance with slightly strong Cyan	
DEF3	Color balance with emphasis on Cyan	

- Service color balance target in the copy color balance adjustment (SIM 45-24).

  For the service color balance target, an optional color balance can be adjusted with SIM 46-21 and registered with SIM 63-7. When, however, SIM 63-8 is executed, the color balance is set to the same balance as the factory color balance target set with SIM 63-11.
- Color balance target in the user color balance adjustment

  This color balance is same as the service color balance target in the copy color balance adjustment (SIM 46-24). When, therefore, the service color balance target is changed, this target is also changed accordingly.

(Meaning of the service color balance target gamma data and the purpose of registration)

This procedure must be executed only when the color balance is customized with SIM 46-21.

If the color balance is not customized, this procedure is not required.

After completion of the customized color balance adjustment (Manual) with SIM 46-21 according to the user's request, use SIM 63-7 to register the service color balance target data by use of the printed adjustment pattern.

By this procedure, the service color balance target is revised.

It is recommendable to keep the printed adjustment pattern with SIM 46-21. This adjustment pattern can be used to register the same color balance target to another machine.

It is also useful to register the service color balance target data.

Do not fold it and keep it under the circumstances which protect it from discoloration and dirt.

The service color balance target data are basically registered immediately after the color balance adjustment (Manual) with SIM 46-21.

If a considerable time has passed after completion of the color balance adjustment (Manual) with SIM 46-21, the color balance of the adjustment pattern at the time of adjustment differs from the color balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The correctness of the service color balance target data can be judges as follows.

Select the service color balance target with SIM 46-24 and execute the color valance adjustment (Auto), and check the adjustment result. When the result is unsatisfactory or abnormal, the registered service target data for the color balance adjustment (Auto) may be improper.

This may be caused when an improper or abnormal color balance adjustment pattern was used to register the service color balance target data for the color balance adjustment with SIM 63-7.

The color balance adjustment pattern used in registration was made and printed by the color balance adjustment (Manual) with SIM 46-21. This procedure may have been executed erroneously.

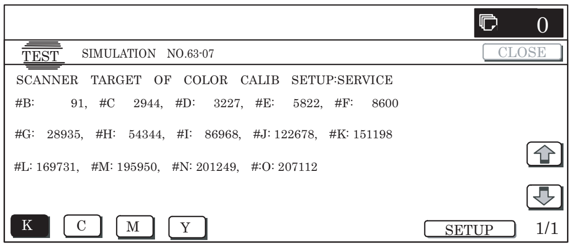
b. Setting procedure

(Setting procedure of an optional color balance (gamma) as the service color balance target)

1) Use SIM 46-21 (Copy color balance adjustment (manual adjustment) mode) to print two sheets of the color patch image (adjustment pattern).

   If the color balance is shifted from the standard, an adjustment is required. If not, an adjustment is not required. When an optional color balance is requested by the user, make an adjustment.

2) Enter the SIM 63-7 mode.



SIMULATION NO.63-07

SCANNER TARGET OF COLOR CALIB SETUP:SERVICE

#B: 91, #C 2944, #D: 3227, #E: 5822, #F: 8600

#G: 28935, #H: 54344, #I: 86968, #J: 122678, #K: 151198

#L: 169731, #M: 195950, #N: 201249, #:O: 207112

3) Press [SETUP] key.

4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the copy color balance adjustment (Manual adjustment) (SIM 46-21) (ADJ 20C) on the document table.

The color patch image (adjustment pattern) printed with SIM 64-2 can be used instead. In this case, however, check that the printed pattern is normal.

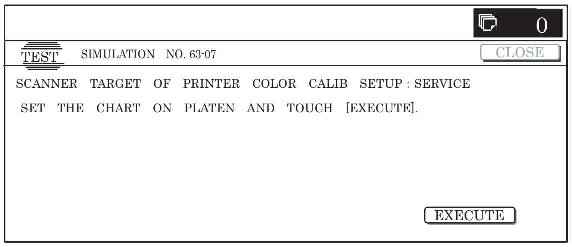
(When the color patch image (adjustment pattern) is printed by SIM 64-2, set the item B (PROC ADJ) to "0 (YES)" and press [EXECUTE] key to print.)

A color patch image (adjustment pattern) printed by another machine can be used.

Set the pattern so that the light density side is on the left side. Place 5 sheets of white paper on the color patch image (adjustment pattern).

If the color balance could not be adjusted satisfactorily with SIM 46-21 (Color balance adjustment (Manual)), do not execute SIM 63-7 to register the service color balance target data.

5) Press [EXECUTE] key.



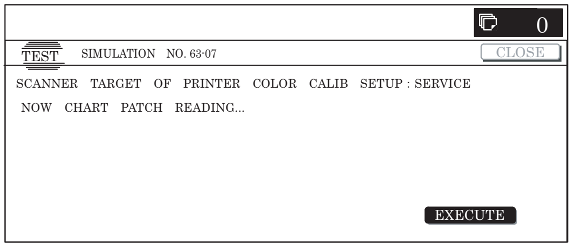
SIMULATION NO. 63-07

SCANNER TARGET OF PRINTER COLOR CALIB SETUP : SERVICE

SET THE CHART ON PLATEN AND TOUCH [EXECUTE].

The color patch image (adjustment pattern) is read.

6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.



SIMULATION NO. 63-07

SCANNER TARGET OF PRINTER COLOR CALIB SETUP : SERVICE

NOW CHART PATCH READING...

The color balance (gamma) target set level of each color (KCMY) can be checked with K/C/M/Y keys.

Check that the set level is increased in the sequence of B – O. If there is no variation or variation is reversed, it is judged as abnormal.

In case of an abnormality, settle the problem and try again.

7) Press [OK] key.

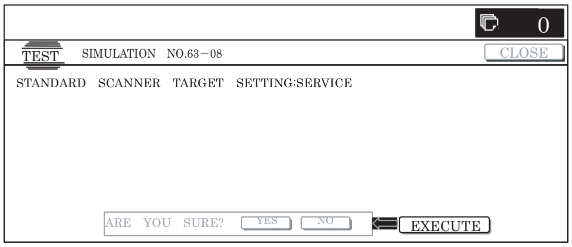
The color balance (gamma) of the color patch image (adjustment pattern) used in the procedure 5) is set as the service target.

(Procedures to set the service color balance target and the color balance target for the user color balance adjustment to the same color balance as the factory color balance target)

This procedure must not be executed when the copy color balance was adjusted with SIM 46-21 to a unique color balance requested by the user and it was registered as the service color balance target with SIM 63-7.

* When the factory color balance target is changed with SIM 63-11, be sure to execute this procedure.

1) Enter the SIM 63-8 mode.



SIMULATION NO.63－08

STANDARD SCANNER TARGET SETTING:SERVICE

ARE YOU SURE?

2) Press [EXECUTE] key.

3) Press [YES] key.

The service color balance target and the color balance target for the user color balance adjustment are set to the same color balance as the factory color balance target.

20-D Copy density adjustment (Each color copy mode) (Whole adjustment) (Normally unnecessary to adjust)

This adjustment is required in the following cases.

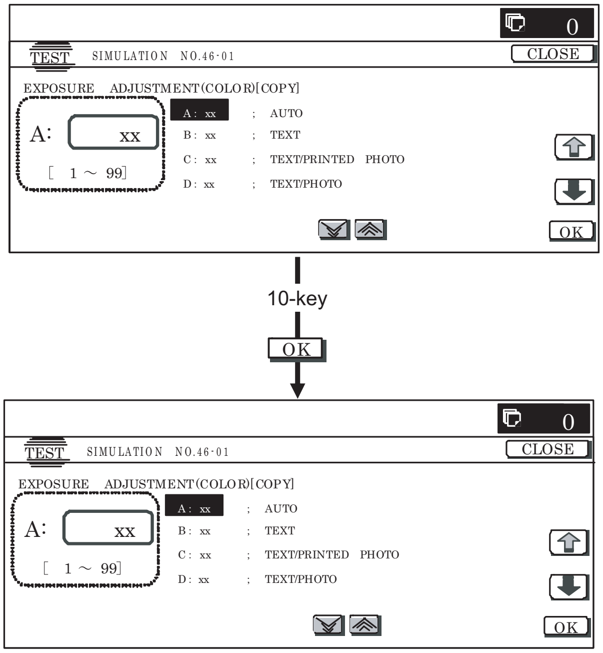
* When a U2 trouble occurs.

* When the MFP PWB is replaced.

* When the EEPROM on the MFP PWB is replaced.

The density is adjusted in each copy mode individually. Normally individual adjustments are not required. When there is a request from the user, execute this adjustment.

1) Enter the SIM 46-1 mode.



SIMULATION NO.46-01

EXPOSURE ADJUSTMENT(COLOR)[COPY]

A: xx

[1 ～ 99]

A : xx ; AUTO

B : xx ; TEXT

C : xx ; TEXT/PRINTED PHOTO

D : xx ; TEXT/PHOTO

SIMULATION NO.46-01

EXPOSURE ADJUSTMENT(COLOR)[COPY]

A: xx

[1 ～ 99]

A : xx ; AUTO

B : xx ; TEXT

C : xx ; TEXT/PRINTED PHOTO

D : xx ; TEXT/PHOTO

2) Select the copy mode to be adjusted with the scroll key.

Display/Item (Copy mode)			Adjustment value range	Default value
A	AUTO	Auto	1 – 99	50
B	TEXT	Text	1 – 99	50
C	TEXT/PRINTED PHOTO	Text/Printed Photo	1 – 99	50
D	TEXT/PHOTO	Text/Photograph	1 – 99	50
E	PRINTED PHOTO	Printed Photo	1 – 99	50
F	PHOTOGRAPH	Photograph	1 – 99	50
G	MAP	Map	1 – 99	50
H	LIGHT	Light document	1 – 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	1 – 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	1 – 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	1 – 99	50
L	TEXT (COLOR TONE ENHANCEMENT)	Text (Color tone enhancement)	1 – 99	50
M	TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Text/Printed Photo (Color tone enhancement)	1 – 99	50
N	TEXT/PHOTO (COLOR TONE ENHANCEMENT)	Text/Photograph (Color tone enhancement)	1 – 99	50
O	PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Printed Photo (Color tone enhancement)	1 – 99	50
P	PHOTOGRAPH (COLOR TONE ENHANCEMENT)	Photograph (Color tone enhancement)	1 – 99	50
Q	MAP (COLOR TONE ENHANCEMENT)	Map (Color tone enhancement)	1 – 99	50
R	SINGLE COLOR	Single color	1 – 99	50
S	SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	1 – 99	50
T	TWO COLOR	Two-color (Red/Black) copy	1 – 99	50
U	TWO COLOR (COPY TO COPY)	Two-color (Red/Black) copy (Copy document)	1 – 99	50

3) Enter the adjustment value with 10-key and press [OK] key.

4) Press [CLOSE] key in this simulation mode to jump to the normal copy mode. Make a copy and check the adjustment result.

Switch the simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.

Repeat switching the adjustment mode (SIM 46-1) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained.

To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.

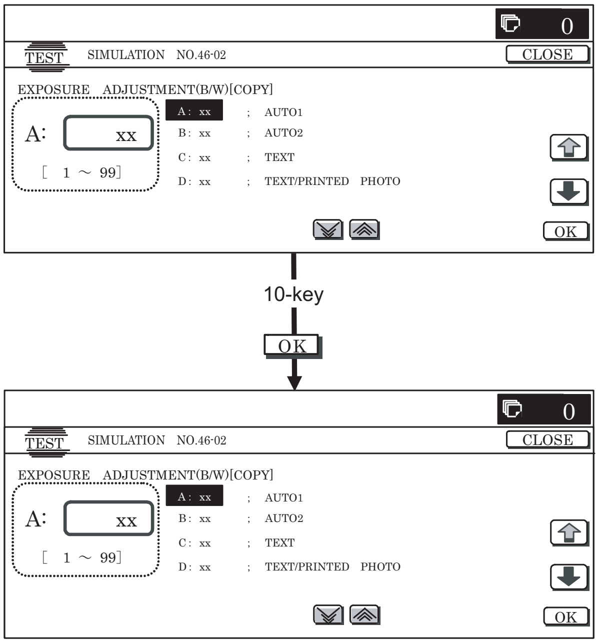
20-E Copy density adjustment (each monochrome copy mode) (Whole adjustment) (Normally unnecessary to adjust)

This adjustment is required in the following cases.

- When a U2 trouble occurs.
- When the MFP PWB is replaced.
- When the EEPROM on the MFP PWB is replaced.

The density is adjusted in each copy mode individually. Normally individual adjustments are not required. This adjustment is executed when there is a request from the user.

1) Enter the SIM 46-2 mode.



TEST SIMULATION NO.46-02

EXPOSURE ADJUSTMENT(B/W)[COPY]

A: xx

[1 ~ 99]

A: xx ; AUTO1
B: xx ; AUTO2
C: xx ; TEXT
D: xx ; TEXT/PRINTED PHOTO

2) Select the copy mode to be adjusted with the scroll key.

Display/Item (Copy mode)			Adjustment value range	Default value
A	AUTO1	Auto 1	1 – 99	50
B	AUTO2	Auto 2	1 – 99	50
C	TEXT	Text	1 – 99	50
D	TEXT/PRINTED PHOTO	Text/Printed Photo	1 – 99	50
E	TEXT/PHOTO	Text/Photograph	1 – 99	50
F	PRINTED PHOTO	Printed Photo	1 – 99	50
G	PHOTOGRAPH	Photograph	1 – 99	50
H	MAP	Map	1 – 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	1 – 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Test/Printed Photo (Copy document)	1 – 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	1 – 99	50
L	LIGHT	Light density document	1 – 99	50

3) Enter the adjustment value with 10-key and press [OK] key.

4) Press [CLOSE] key in this simulation mode to jump to the normal copy mode. Make a copy and check the adjustment result.

Switch the simulation mode and the normal copy mode alternately, and adjust and check the adjustment result.

Repeat switching the adjustment mode (SIM 46-1) and the normal copy mode and changing the adjustment value and checking the adjustment result until a satisfactory result is obtained.

To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.

20-F Copy color balance adjustment (Color balance adjustment at each density level in each color copy mode) (Normally not required)

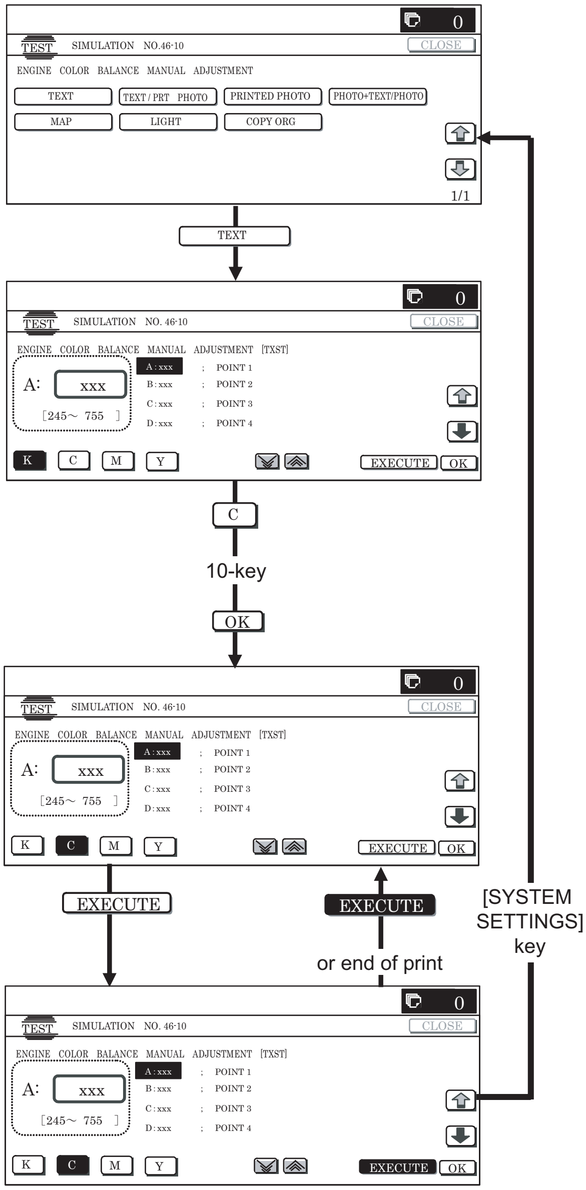
This adjustment is required in the following cases.

- When a U2 trouble occurs.
- When the MFP PWB is replaced.
- When the EEPROM on the MFP PWB is replaced.

This is to adjust the color balance at each density level in each color copy mode.

Normally individual adjustments are not required. This adjustment is executed when there is a request from the user.

1) Enter the SIM 46-10 mode.


TEST
SIMULATION NO.46-10
CLOSE
ENGINE COLOR BALANCE MANUAL ADJUSTMENT
TEXT
TEXT / PRT PHOTO
PRINTED PHOTO
PHOTO+TEXT/PHOTO
MAP
LIGHT
COPY ORG
1/1
TEXT
ENGINE COLOR BALANCE MANUAL ADJUSTMENT [TXST]
A: xxx
[245～ 755]
A : xxx ; POINT 1
B : xxx ; POINT 2
C : xxx ; POINT 3
D : xxx ; POINT 4
K C M Y
EXECUTE OK
C
10-key
OK
EXECUTE
EXECUTE
or end of print
[SYSTEM SETTINGS] key

2) Select the copy mode to be adjusted with the mode key.

3) Select a color to change the adjustment value with the color key.

4) Select the density level (point) to be adjusted with the scroll key.

Item/Display		Density level (Point)	Adjustment value range	Default value
A	POINT1	Point 1	245 – 755	500
B	POINT2	Point 2	245 – 755	500
C	POINT3	Point 3	245 – 755	500
D	POINT4	Point 4	245 – 755	500
E	POINT5	Point 5	245 – 755	500
F	POINT6	Point 6	245 – 755	500
G	POINT7	Point 7	245 – 755	500
H	POINT8	Point 8	245 – 755	500
I	POINT9	Point 9	245 – 755	500
J	POINT10	Point 10	245 – 755	500
K	POINT11	Point 11	245 – 755	500
L	POINT12	Point 12	245 – 755	500
M	POINT13	Point 13	245 – 755	500
N	POINT14	Point 14	245 – 755	500
O	POINT15	Point 15	245 – 755	500

5) Enter the adjustment value with 10-key and press [OK] key.

When the adjustment value is increased, the density is increased. When the adjustment value is decreased, the density is decreased.

When the arrow key is pressed, the color densities selected with the color keys are collectively adjusted. That is, all the density levels (points) from the low density point to the high density point can be adjusted collectively.

When [EXECUTE] key is pressed, the adjustment pattern is printed out.

The color balance at each density level (point) and the density can be checked by referring to this printed adjustment pattern. However, it is more practically to make a cop and check it.

20-G Monochrome copy density adjustment (Density adjustment at each density level in each monochrome copy mode) (Normally not required)

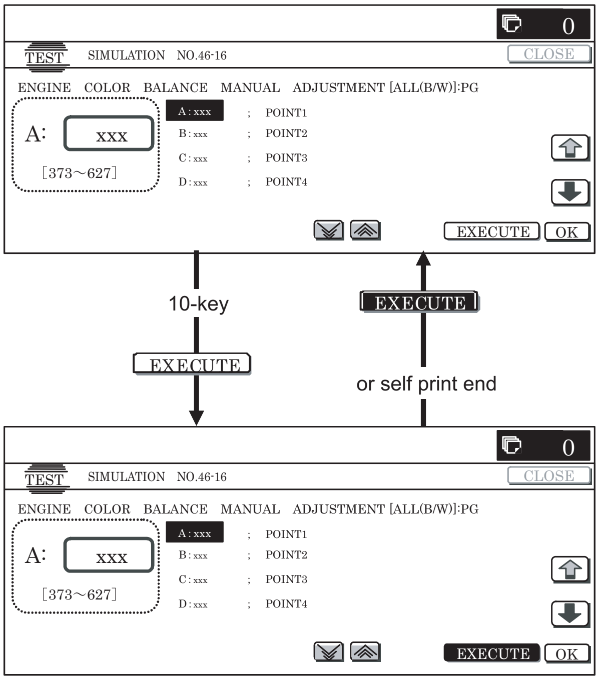
This adjustment is required in the following cases.

- * When a U2 trouble occurs.
- * When the MFP PWB is replaced.
- * When the EEPROM on the MFP PWB is replaced.

This is to adjust each density level in each monochrome copy mode.

Normally individual adjustments are not required. This adjustment is executed when there is a request from the user.

1) Enter the SIM 46-16 mode.


TEST
SIMULATION NO.46-16
CLOSE
ENGINE COLOR BALANCE MANUAL ADJUSTMENT [ALL(B/W)]:PG
A: xxx
[373～627]
A : xxx ; POINT1
B : xxx ; POINT2
C : xxx ; POINT3
D : xxx ; POINT4
EXECUTE OK
10-key
EXECUTE
EXECUTE
or self print end

2) Select the density level (point) to be adjusted with the scroll key.

3) Enter the adjustment value with 10-key and press [OK] key.

When the adjustment value is increased, the density is increased. When the adjustment value is decreased, the density is decreased.

When the arrow key is pressed, the selected are collectively adjusted. That is, all the density levels (points) from the low density point to the high density point can be adjusted collectively.

When [EXECUTE] key is pressed, the adjustment pattern is printed out.

The density at each density level (point) can be checked by referring to this printed adjustment pattern. However, it is more practically to make a cop and check it.

20-H Gamma/density adjustment in the text image edge section (Normally not required)

This adjustment is used to change the reproduction level of text and outline to an optional level by changing the gamma and the density at the edge section of text image. The thickness of fine text and fine lines is changed by this adjustment.

The adjustment result must be checked in the Text/Printed Photo copy mode (Manual).

This adjustment is enabled only in the Text mode, the Text/Printed Photo mode, and the Text/Photograph copy mode.

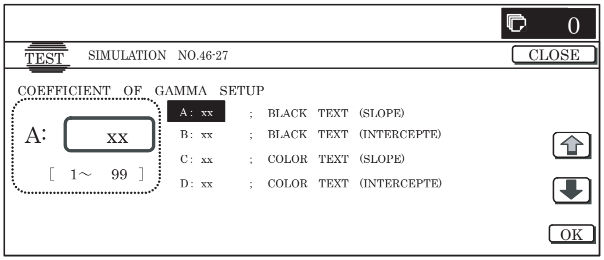
When the default adjustment value is changed, this adjustment is required in the following cases.

* When a U2 trouble occurs.

* When the MFP PWB is replaced.

* When the EEPROM on the MFP PWB is replaced.

1) Enter the SIM 46-27 mode.



SIMULATION NO.46-27

COEFFICIENT OF GAMMA SETUP

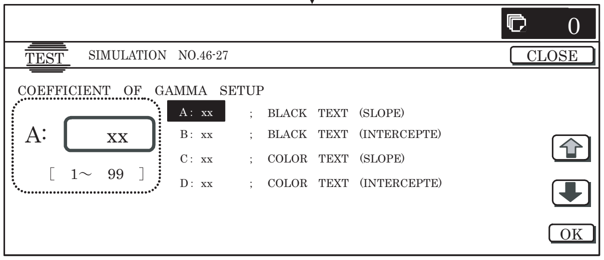
A: xx

[1～ 99]

A: xx ; BLACK TEXT (SLOPE)
B: xx ; BLACK TEXT (INTERCEPTE)
C: xx ; COLOR TEXT (SLOPE)
D: xx ; COLOR TEXT (INTERCEPTE)

10-key

OK



SIMULATION NO.46-27

COEFFICIENT OF GAMMA SETUP

A: xx

[1～ 99]

A: xx ; BLACK TEXT (SLOPE)
B: xx ; BLACK TEXT (INTERCEPTE)
C: xx ; COLOR TEXT (SLOPE)
D: xx ; COLOR TEXT (INTERCEPTE)

2) Select an adjustment item with the scroll key.

Display/Item (Copy mode)		Content	Adjustment range	Default value
A	BLACK TEXT (SLOPE)	Black text edge area engine γ curve calculation coefficient (slope) setting	1 – 99	50
B	BLACK TEXT (INTERCEPT)	Black text edge area engine γ curve calculation coefficient (density) setting	1 – 99	50
C	COLOR TEXT (SLOPE)	Color text edge area engine γ curve calculation coefficient (slope) setting	1 – 99	50
D	COLOR TEXT (INTERCEPT)	Color text edge area engine γ curve calculation coefficient (density) setting	1 – 99	50
E	ED TEXT (SLOPE)	Error diffusion edge area engine γ curve calculation coefficient (slope) setting	1 – 99	50
F	ED TEXT (INTERCEPT)	Error diffusion edge area engine γ curve calculation coefficient (density) setting	1 – 99	50

3) Enter the adjustment value with 10-key.

When the adjustment value of item A, C, or E is changed, the gamma at the edge area of text and lines is changed.

When the adjustment value is increased, the image contrast at the edge area of text and lines is increased. When the adjustment value is decreased, the contrast is decreased.

When the adjustment value of item B, D, or F is increased, the image density at the edge area of text and lines is increased. When the value is decreased, the density is decreased.

4) Press [OK] key.

5) Press [CLOSE] key to exit from the simulation.

6) Make a copy in the TEXT/Printed Photo copy mode (Manual), and check the copy.

Use a document with fine text and line images for copying and checking.

If a satisfactory result is not obtained, return to the SIM 46-27 mode and change the adjustment value.

Repeat the above procedures until a satisfactory result is obtained.

20-I Copy color balance adjustment (Single color copy mode) (Normally not required)

This adjustment is used to set the color balance and the density in the single color copy mode to the user's request.

The adjustment is made by changing YMC components of each color.

This adjustment is not required normally, but executed when there is a request from the user.

When the default adjustment value is changed, this adjustment is required in the following cases.

* When the CCD unit is replaced.

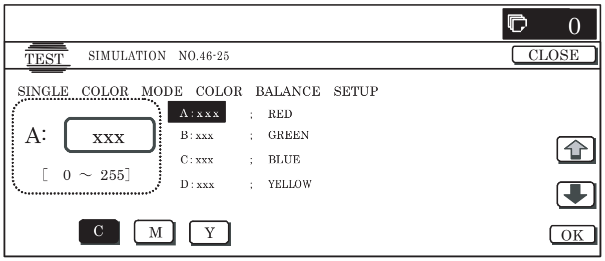
* When a U2 trouble occurs.

* When the MFP PWB is replaced.

* When the EEPROM on the MFP PWB is replaced.

a. Adjustment procedures

1) Enter the SIM 46-25 mode.



SIMULATION NO.46-25

SINGLE COLOR MODE COLOR BALANCE SETUP

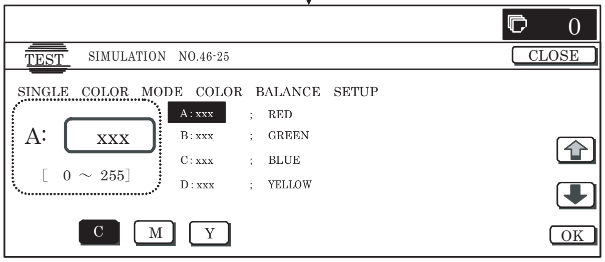
A: xxx

[0 ～ 255]

A: xxx ; RED
B: xxx ; GREEN
C: xxx ; BLUE
D: xxx ; YELLOW

10-key

OK



SIMULATION NO.46-25

SINGLE COLOR MODE COLOR BALANCE SETUP

A: xxx

[0 ～ 255]

A: xxx ; RED
B: xxx ; GREEN
C: xxx ; BLUE
D: xxx ; YELLOW

2) Select the color to be adjusted with the scroll key.

3) Select the color (YMC) to be adjusted with the color key.

4) Enter the adjustment value with 10-key.

Display/Item		Adjustment value	Default value		
			C	M	Y
A	RED	0 – 255	0	255	255
B	GREEN	0 – 255	255	0	255
C	BLUE	0 – 255	255	255	0
D	YELLOW	0 – 255	0	0	255
E	MAGENTA	0 – 255	0	255	0
F	CYAN	0 – 255	255	0	0

5) Press [OK] key.

6) Press [CLOSE] key to exit from the simulation.

7) Make a copy in the single color copy mode and check the copy.

If a satisfactory result is not obtained, return to the SIM 46-25 mode and change the adjustment value. Repeat the above procedures until a satisfactory result is obtained.

20-J Auto color balance adjustment by the user (Copy color balance auto adjustment enable setting and adjustment)

a. General

In the user program mode, the user can execute the auto color calibration (auto adjustment of the copy color balance and density).

This adjustment is to set Enable/Disable of the above user operation with SIM 26-53.

NOTE: This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy color balance and density and the user's operational ability are judged enough to execute the adjustment.

When set to ENABLE, give enough explanations on the operating procedures, notes, and operations to the user.

This adjustment is required in the following cases.

* When a U2 trouble occurs.

* When the MFP PWB is replaced.

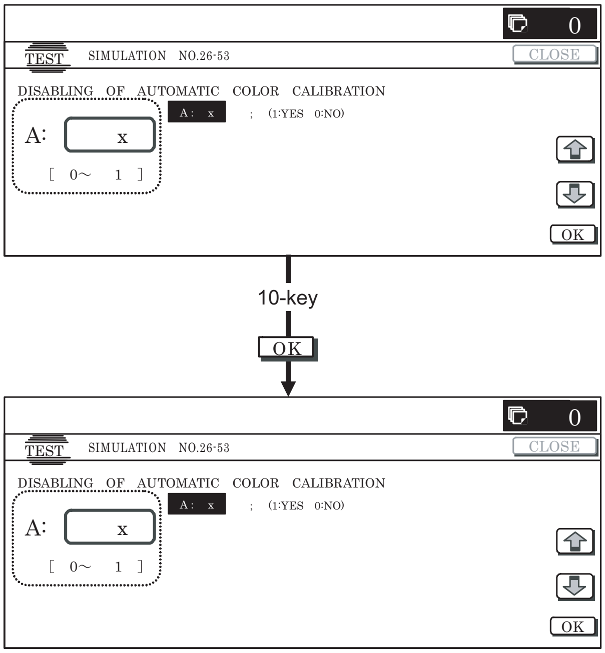
* When the EEPROM on the MFP PWB is replaced.

* When the PCU PWB is replaced.

* When the EEPROM on the PCU PWB is replaced.

b. Setting procedure

1) Enter the SIM 26-53 mode.



0

TEST SIMULATION NO.26-53

DISABLING OF AUTOMATIC COLOR CALIBRATION

A: x ; (1:YES 0:NO)

A: x

[0~ 1]

0

TEST SIMULATION NO.26-53

DISABLING OF AUTOMATIC COLOR CALIBRATION

A: x ; (1:YES 0:NO)

A: x

[0~ 1]

2) Select ENABLE or DISABLE with 10-key.

When disabling, set to "0" (NO).

When enabling, set to "1" (Yes).

3) Press [OK] key.

When set to DISABLE, the menu of the user auto color calibration (automatic adjustment of copy color balance and density) is not displayed in the user program mode.

(Auto color calibration by the user (Auto color balance adjustment))

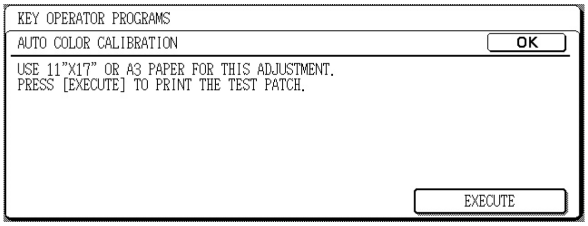
Remark: This adjustment is based on the service target color balance set with SIM 63-7 and SIM 63-8. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.

2) Enter the copy setting mode.

3) Press the auto color calibration key.

4) Press [EXECUTE] key.



KEY OPERATOR PROGRAMS

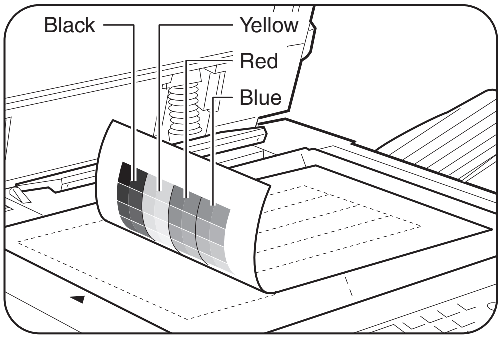
AUTO COLOR CALIBRATION

USE 11"X17" OR A3 PAPER FOR THIS ADJUSTMENT.
PRESS [EXECUTE] TO PRINT THE TEST PATCH.

The color patch image (adjustment pattern) is printed out.

5) Set the color patch image (adjustment pattern) printed in procedure 4) on the document table. Set the patch image so that the light density area is on the left side.

At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).



6) Press [EXECUTE] key, and the copy color balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

20-K Background process condition setting in the color auto copy mode

When the adjustment value is changed from the default adjustment value, this adjustment is required in the following cases.

* When a U2 trouble occurs.

* When the MFP PWB is replaced.

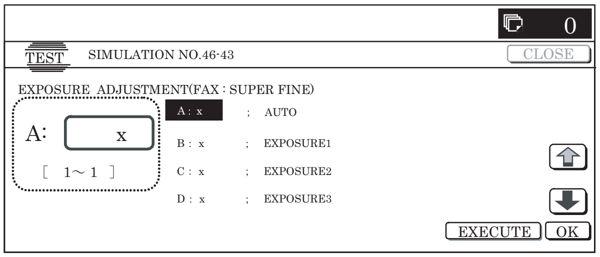
* When the EEPROM on the MFP PWB is replaced.

* When the user request for the adjustment.

This adjustment is used to set the condition for inhibiting copy of the background depending on the document image kind and state.

The setting is applied to the color auto copy mode.

1) Enter the SIM 46-33 mode.



SIMULATION NO.46-43

EXPOSURE ADJUSTMENT(FAX : SUPER FINE)

A: x

[1～1]

A : x ; AUTO
B : x ; EXPOSURE1
C : x ; EXPOSURE2
D : x ; EXPOSURE3

2) Select COLOR AE mode with [NEXT] and [BACK] key.

3) Select the setting mode with the scroll key.

Display/Item				Content	Adjustment range	Default value
COLOR AE	A	SW_ MODE1	ON OFF	Auto mode: Text document background detection	0 – 1	1
	B	SW_ MODE2	ON OFF	Auto mode: Text mesh document background detection	0 – 1	1
	C	SW_ MODE3	ON OFF	Auto mode: Text-on-mesh document background detection	0 – 1	1
	D	SW_ MODE4	ON OFF	Auto mode: Mesh document background detection	0 – 1	0
	E	SW_ MODE5	ON OFF	Auto mode: Photo document background detection	0 – 1	0
	F	SW_ MODE6	ON OFF	Auto mode: text document background detection	0 – 1	0
	G	SW_ MODE7	ON OFF	Auto mode: Other document background detection	0 – 1	0
	H	TH_MAX_ MONO		Monochrome background detection threshold value	0 – 32	15
	I	TH_MAX_ COLOR		Color background detection threshold value	0 – 32	15
	J	SW_NEWS		Newspaper background forcible delete switch	0 – 1	0
	K	SW_MODE_ SCR1		Mesh area background judgment switch	1 – 3	3
	L	SW_MODE_ SCR2		Mesh area background delete select switch	0 – 1	0
	M	SW_MODE_ MIX		Auto other document background detection switch	1 – 2	2
	N	SW_HOSEI		Correction table correction	0 – 8 (–4 – +4)	4
	A	TH_MODE_ SCR		Mesh ratio threshold value	0 – 10000	3000
	B	TH_SITAJI_ SCR		Background mesh threshold value	0 – 10000	3000

Set item A (SW MODE1) – G (SW MODE7):

Used to set Enable/Disable of the background delete function for various kinds of documents.

When the value of the set item corresponding to the document kind is set to 1, the background delete function of the document kind is enabled.

To reproduce the document colors directly, set this setting to OFF (0).

After entering the set value, press [OK] key to save the entered value to the memory.

Set item H (TH_MAX_MONO):

Used to set the density level at which the background delete function is enabled for monochrome background documents.

Set to the range of 0 – 16.

To delete the background of light-density documents: Increase the set value.

To delete the background of dark-density documents: Decrease the set value.

After entering the set value, press [OK] key to save the set value to the memory.

Set item I (TH_MAX_COLOR):

Used to set the density level at which the background delete function is enabled for color background documents.

Set to the range of 0 – 16.

To delete the background of light-density documents: Increase the set value.

To delete the background of dark-density documents: Decrease the set value.

After entering the set value, press [OK] key to save the set value to the memory.

Set item J (SW_NEWS):

Used to set Enable/Disable of the newspaper (monochrome) background delete function.

It is not affected by the set item H.

For newspapers of color background, this setting is invalid.

After entering the set value, press [OK] key to save the set value to the memory.

Set item A (TH_MODE_SCR):

Used to set the mesh are level at which the background delete function is enabled for printed documents with mesh images.

To delete background of documents with much mesh area: Increase the set value.

To delete background of documents with less mesh area: Decrease the set value.

Select TH_MODE_SCR, enter the set value, and press [SET] key to save the entered value to the memory.

(NOTE)

Enable/Disable of the background delete operation is determined by AND condition of A (SW MODE1) – G (SW MODE7), H (TH_MAX_MONO), I (TH_MAX_COLOR), and A (TH_MODE_SCR). For newspapers documents, however, it is determined by the set item J (SW_NEWS) only.

Except for the above set items, do not change the setting in the market. Set them to the default values.

20-L Color document identification level (ACS operation) setting

When the machine is used with some adjustment values changed from the default values, this adjustment is required in the following cases.

* When a U2 trouble occurs.

* When the MFP PWB is replaced.

* When the EEPROM on the MFP PWB is replaced.

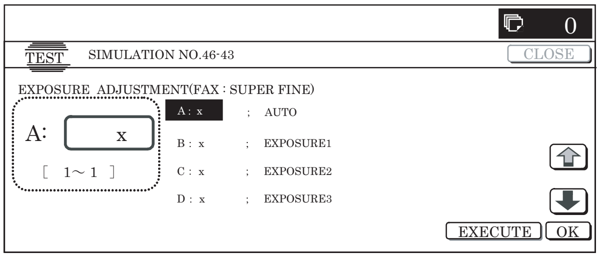
* When the user requests for the adjustment.

This setting is used to set the recognition level of a color image in a document.

The actual ACS operation is executed according to the combination of the judgment reference value in the color auto mode set by the device and this setting.

When a monochrome document cannot be judged as a monochrome document or when a color document cannot be judged as a color document, change this setting. This setting is applied to the color auto copy mode.

1) Enter the SIM 46-33 mode.



SIMULATION NO.46-43

EXPOSURE ADJUSTMENT(FAX : SUPER FINE)

A: x

[1～1]

A : x ; AUTO
B : x ; EXPOSURE1
C : x ; EXPOSURE2
D : x ; EXPOSURE3

2) Select the ACS mode with [NEXT] key and [BACK] key.

3) Select the setting mode of "P/SIM LEVEL" with the scroll key.

When a monochrome document is not recognized as a monochrome document, increase the set value.

When a color document is not recognized as a color document, decrease the set value.

After entering the set value, press [OK] key to save the set value to the memory.

The figure in the table indicates the ACS setting level in the device setting.

The ACS setting level of the device setting (the judgment reference value in the color auto mode) is changed with the setting of SIM 46-33 ACS/P/SIM LEVEL.

The left and the upper area from the cross point of the device setting on the table and the ACS/P/SIM LEVEL setting serves as the ACS operation condition.

	← Large hue area				Small hue area →
	Hue area (Device setting ACS setting level (Judgment reference set value in the color auto mode))				
ACS color judgment setting	Area level 5	Area level 4	Area level 3	Area level 2	Area level 1
	Can be set optionally. (30000 pixel or more)	About 10mm x 5mm (30000 pixel)	About 5mm x 5mm (15000 pixel)	About 3mm x 4mm (7000 pixel)	About 1mm x 3mm (1875 pixel)

		Area level 5	Area level 4	Area level 3	Area level 2	Area level 1
		Can be set optionally. (30000 pixel or more)	About 10mm × 5mm (30000 pixel)	About 5mm × 5mm (15000 pixel)	About 3mm × 4mm (7000 pixel)	About 1mm × 3mm (1875 pixel)
Large color area ↑ Hue level (ACS/P/SIM LEVEL) ↓ Small color area	Hue level 5	⑤ C		④ C		
	Hue level 4	⑤ B		④ B	③ C	② C
	Hue level 3	⑤ A		④ A	③ B	② B ① C
	Hue level 2				③ A	① B ② A
	Hue level 1					② A

Device setting ACS setting level (Judgment reference set value in the color auto mode) (5 steps)

[Monochrome] 1 ← 2 ← 3 → 4 → 5 [Color]

SIM 46-33 ACS/P/SIM LEVEL (3 steps)

Weak hue [Monochrome] ↔ [Color] Strong hue

XC XB XA

* Adjustment in 3 steps of device setting

(Example) When the ASC setting level of device setting (judgment reference set value in the color auto mode) is 2 and SIM 46-33 ACS/P/SIM LEVEL is set to 3, the following area serves as the ACS operating condition.

← Large hue area　　Small hue area →

ACS color judgment setting			Hue area (Device setting ACS setting level (Judgment reference set value in the color auto mode))				
			Area level 5	Area level 4	Area level 3	Area level 2	Area level 1
			Can be set optionally. (30000 pixel or more)	About 10mm x 5mm (30000 pixel)	About 5mm x 5mm (15000 pixel)	About 3mm x 4mm (7000 pixel)	About 1mm x 3mm (1875 pixel)
Hue level (SIM LEVEL)	Strong hue ↑	Hue level 5	▨	▨	▨		
		Hue level 4	▨	▨	▨		
		Hue level 3	▨	▨	▨ ④		
		Hue level 2					
	Weak hue ↓	Hue level 1					

(NOTE) Though the judgment reference in the color auto mode of device setting is set to "5: Monochrome," if a monochrome document is not recognized as a monochrome document, increase the set value of the set item A TH ACS5 ENLARGE (area level 5).

After entering the set value, press [OK] key to save the set value to the memory.

Except for the above set item, do not change the setting in the market. Set it to the default value.

21 Printer color balance/density adjustment

(1) Note before execution of the printer color balance/density adjustment

(Requisite condition before execution of the printer color balance/density adjustment)

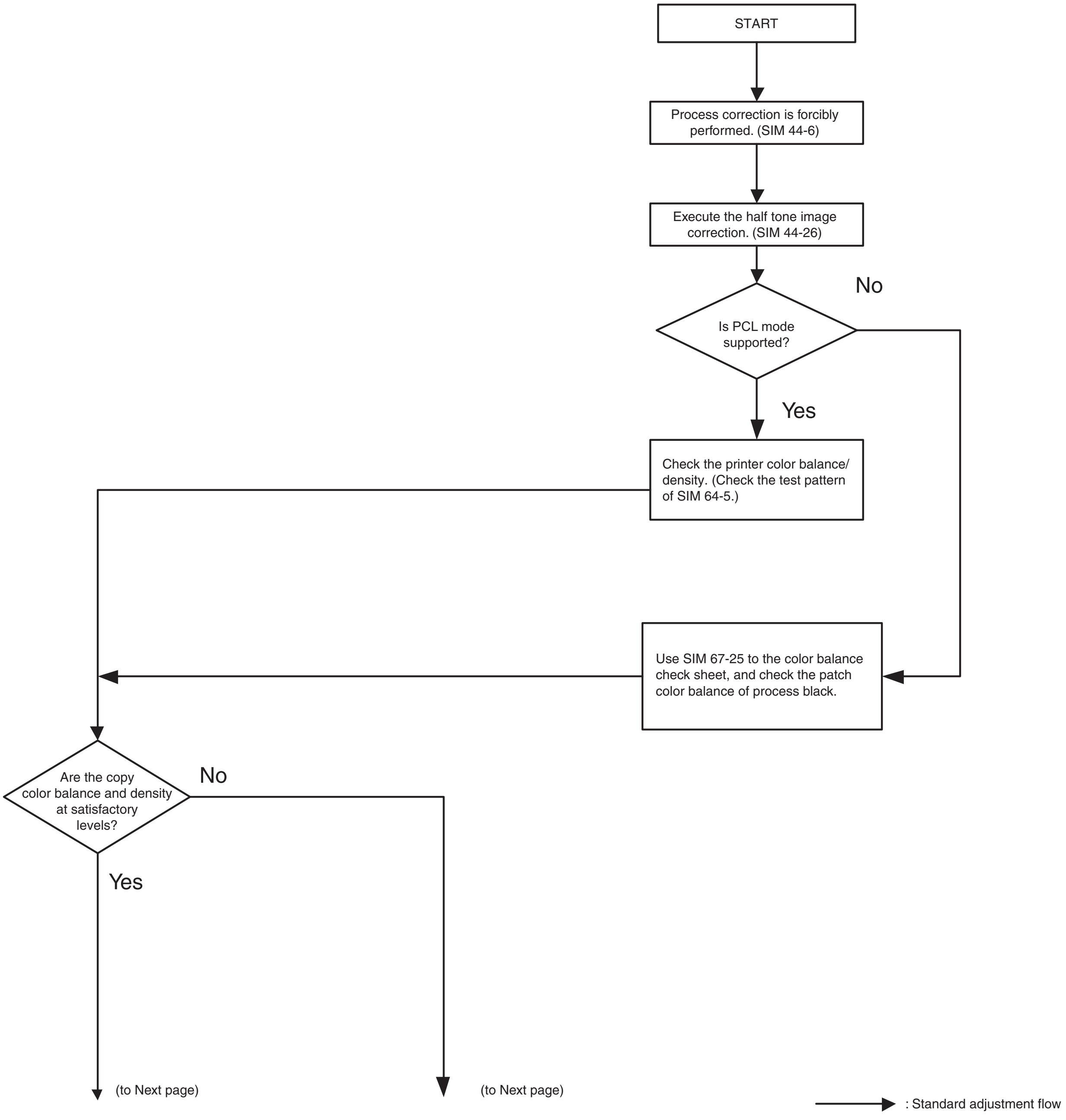
Before execution of the printer color balance/density adjustment, the copy color balance/density adjustment must have been completed properly.

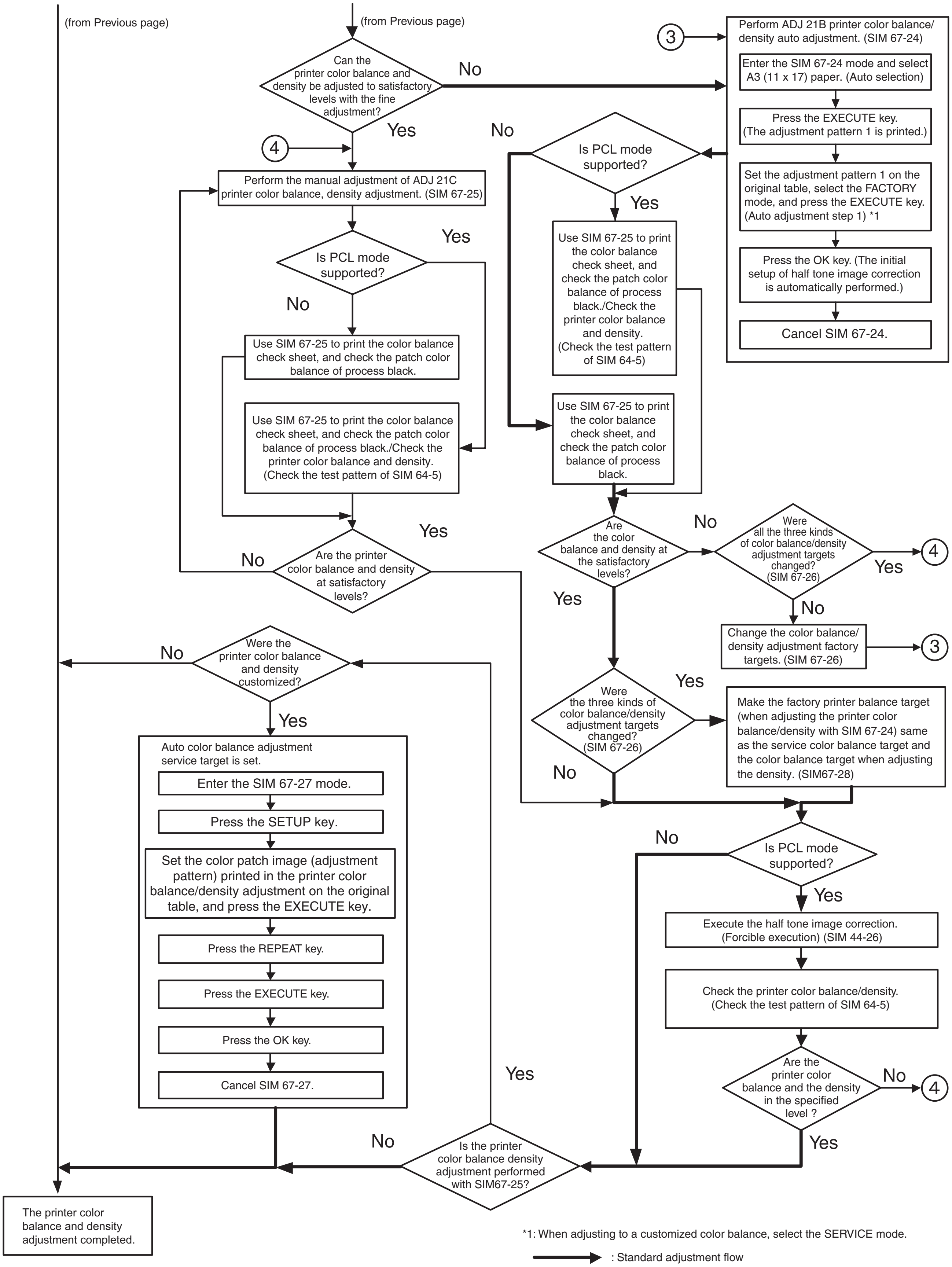
(This adjustment is required in the following cases.)

- * Basically same as when the copy color balance/density adjustment is required. Refer to the page of the ADJ 20 print color balance/density adjustment.
- * After the copy color balance/density adjustment.

(2) Flow of printer color balance/density adjustment procedures

Printer color balance/density adjustment


START
Process correction is forcibly performed. (SIM 44-6)
Execute the half tone image correction. (SIM 44-26)
Is PCL mode supported?
No
Yes
Check the printer color balance/ density. (Check the test pattern of SIM 64-5.)
Use SIM 67-25 to the color balance check sheet, and check the patch color balance of process black.
Are the copy color balance and density at satisfactory levels?
No
Yes
(to Next page)
(to Next page)
: Standard adjustment flow


(from Previous page)
(from Previous page)
Can the printer color balance and density be adjusted to satisfactory levels with the fine adjustment?
No
Yes
③
Perform ADJ 21B printer color balance/density auto adjustment. (SIM 67-24)
Enter the SIM 67-24 mode and select A3 (11 x 17) paper. (Auto selection)
Press the EXECUTE key. (The adjustment pattern 1 is printed.)
Set the adjustment pattern 1 on the original table, select the FACTORY mode, and press the EXECUTE key. (Auto adjustment step 1) *1
Press the OK key. (The initial setup of half tone image correction is automatically performed.)
Cancel SIM 67-24.
④
Perform the manual adjustment of ADJ 21C printer color balance, density adjustment. (SIM 67-25)
No
Is PCL mode supported?
Yes
Use SIM 67-25 to print the color balance check sheet, and check the patch color balance of process black./Check the printer color balance and density. (Check the test pattern of SIM 64-5)
Use SIM 67-25 to print the color balance check sheet, and check the patch color balance of process black.
Is PCL mode supported?
Yes
No
Use SIM 67-25 to print the color balance check sheet, and check the patch color balance of process black.
Use SIM 67-25 to print the color balance check sheet, and check the patch color balance of process black./Check the printer color balance and density. (Check the test pattern of SIM 64-5)
Are the color balance and density at the satisfactory levels?
No
Were all the three kinds of color balance/density adjustment targets changed? (SIM 67-26)
Yes
④
No
Change the color balance/density adjustment factory targets. (SIM 67-26)
③
Yes
Are the printer color balance and density at satisfactory levels?
No
Yes
Were the three kinds of color balance/density adjustment targets changed? (SIM 67-26)
Yes
No
Make the factory printer balance target (when adjusting the printer color balance/density with SIM 67-24) same as the service color balance target and the color balance target when adjusting the density. (SIM67-28)
Were the printer color balance and density customized?
No
Yes
Auto color balance adjustment service target is set.
Enter the SIM 67-27 mode.
Press the SETUP key.
Set the color patch image (adjustment pattern) printed in the printer color balance/density adjustment on the original table, and press the EXECUTE key.
Press the REPEAT key.
Press the EXECUTE key.
Press the OK key.
Cancel SIM 67-27.
Is PCL mode supported?
No
Yes
Execute the half tone image correction. (Forcible execution) (SIM 44-26)
Check the printer color balance/density. (Check the test pattern of SIM 64-5)
Are the printer color balance and the density in the specified level ?
No
④
Yes
Yes
No
Is the printer color balance density adjustment performed with SIM67-25?
The printer color balance and density adjustment completed.

*1: When adjusting to a customized color balance, select the SERVICE mode.

: Standard adjustment flow

(3) Printer color balance/density check

(Note)

Before checking the copy color balance and the density, be sure to execute the following procedures in advance.

* Execute the high density image correction (process correction) forcibly. (SIM 44-6)

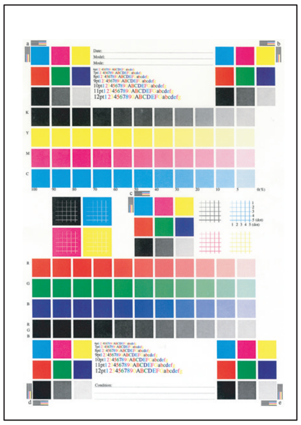
* Execute the half tone image correction forcibly. (SIM 44-26)

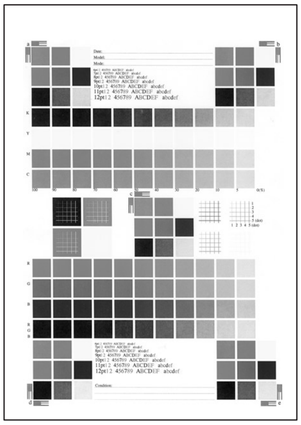
(Procedure)

a. When the PCL mode is supported:

Execute SIM 64-5 to print the print test pattern.

Set each set value to the default and press [EXECUTE] key. The print test pattern is printed.





The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed. The density level of each color must be almost at the same level.

b. When the PCL mode is not supported: (In the case of GDI model)

Use SIM 67-25 to print the color balance adjustment sheet and compare each process (CMY) black patch color balance and the black patch to check the color balance.

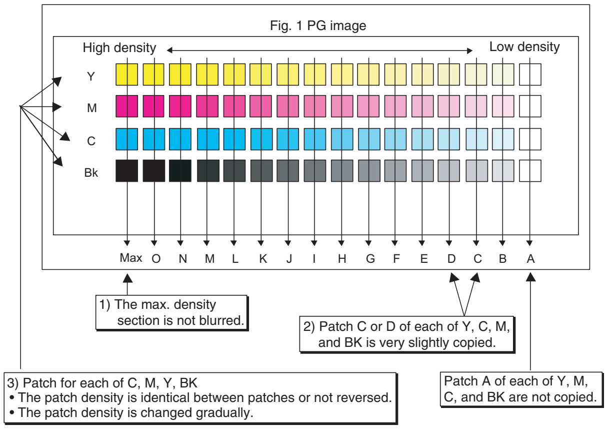

High density
Low density
Y
M
C
Bk
Max
O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
1) The max. density section is not blurred.
2) Patch C or D of each of Y, C, M, and BK is very slightly copied.
3) Patch for each of C, M, Y, BK
• The patch density is identical between patches or not reversed.
• The patch density is changed gradually.
Patch A of each of Y, M, C, and BK are not copied.

Fig. 1 PG image

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

21-A Printer color balance adjustment (Auto adjustment)

a. General

The color balance adjustment (auto adjustment) is used to adjust the print density of each color (Cyan, Magenta, Yellow, Black) automatically with SIM 67-24 or the user program.

(When this adjustment is executed, the color balance adjustments of all the print modes are revised.)

There are following two modes of the automatic color balance adjustment.

1) Auto color balance adjustment by the serviceman) (SIM 67-24 I used.)

2) Auto color balance adjustment by the user (The user program is used.) (The color balance target becomes the service target.)

   The auto color balance adjustment by the user is provided to reduce the number of service calls.

   If the print color balance is lost for some reasons, the user can use this color balance adjustment to recover the balance.

   When, however, the machine has a fatal problem or when the machine environment is greatly changed, this function does not work effectively.

   On the other hand, the auto color balance adjustment by the serviceman functions to recover the normal color balance though the machine environment is greatly changed. If the machine has a fatal problem, repair and adjust it for obtaining the normal color balance.

   To perform the adjustment, the above difference must be fully understood.

b. Note for execution of the color balance adjustment (Auto adjustment)

1) The copy color balance adjustment must have been completed properly.

2) Be sure to use the specified paper for color.

3) Before execution of the image quality check and the image quality adjustment, be sure to execute the following corrections forcibly to set the image forming section to the optimum state.

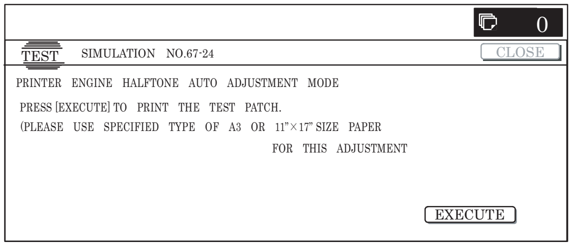
   * Execute the high density image correction (Process correction) forcibly. (SIM 44-6)

   * Execute the half tone image correction forcibly. (SIM 44-26)

c. Adjustment procedure

(Auto color balance adjustment by the serviceman)

1) Enter the SIM 67-24 mode.



SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

PRESS [EXECUTE] TO PRINT THE TEST PATCH.

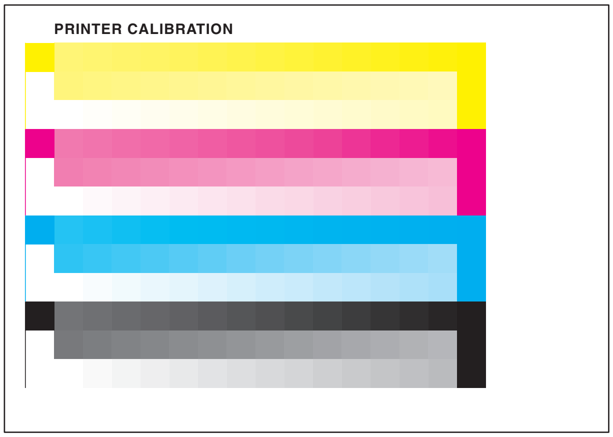
(PLEASE USE SPECIFIED TYPE OF A3 OR 11"×17" SIZE PAPER FOR THIS ADJUSTMENT

2) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

   The color patch image (adjustment pattern) is printed out.

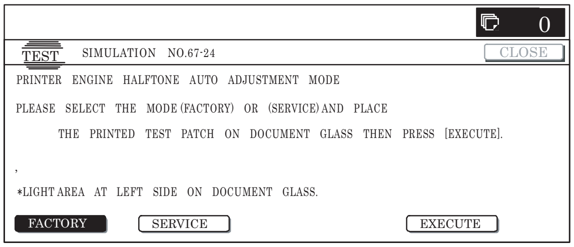
3) Set the color patch image (adjustment pattern) paper printed in procedure 2) on the document table.

Place the printed color patch image (adjustment pattern) paper so that the thin lines on the paper are on the left side. Place 5 sheets of white paper on the printed color patch image (adjustment pattern) paper.



4) Press [FACTORY] key on the operation panel, and press [EXECUTE] key.

When the color balance is customized with the manual color balance adjustment (SIM 67-25) according to the user's request and the color balance is registered as the service target with SIM 67-27, if the color balance is adjusted to that color balance, select the service target.



SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

PLEASE SELECT THE MODE (FACTORY) OR (SERVICE) AND PLACE THE PRINTED TEST PATCH ON DOCUMENT GLASS THEN PRESS [EXECUTE].

*LIGHT AREA AT LEFT SIDE ON DOCUMENT GLASS.

The print color balance adjustment (step 1) is automatically executed to print the color balance check patch image. Wait until the operation panel shown in procedure 5) is displayed.

Remark:

(Descriptions on FACTORY key and SERVICE key in the color balance auto adjustment menu.)

There are two kinds of the gamma target for the color balance auto adjustment; Factory and Service.

FACTORY key and SERVICE key are used to select one of the above two.

Factory target color balance: Standard color balance (It can be selected from the three kinds of fixed color balances with SIM 63-11.)

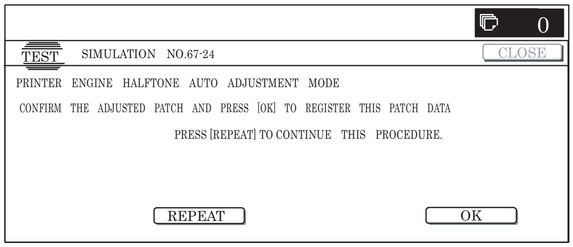
Service target color balance: The color balance can be customized according to the user's request. (Variable)

When shipping, the service target gamma data and the factory target gamma data are the same.

Both are set to the standard color balance when shipping.

For the service target, the customized color balance gamma can be registered with SIM 63-7.

5) Press [OK] key on the operation panel.



SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

CONFIRM THE ADJUSTED PATCH AND PRESS [OK] TO REGISTER THIS PATCH DATA

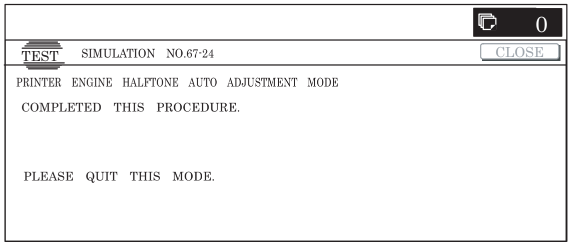
PRESS [REPEAT] TO CONTINUE THIS PROCEDURE.

Remark:

After pressing [OK] key, the initial setting of the half tone image correction is started. During the operation, "NOW REGISTERING THE NEW TARGET OF HALFTONE" is displayed. This operation takes several minutes.

After completion of the operation, "Please quit this mode" is displayed.

Do not cancel the simulation until "Please quit this mode" is displayed.



SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

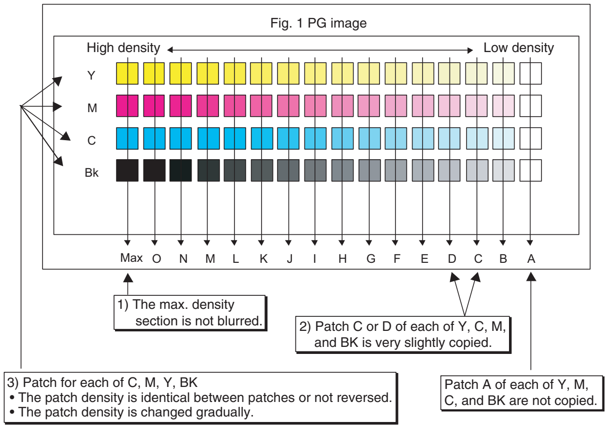
COMPLETED THIS PROCEDURE.

PLEASE QUIT THIS MODE.

6) Check the color balance and density.

(Method 1)

Check to insure that the printed color balance check patch image is within the following specifications.



1) The max. density section is not blurred.

2) Patch C or D of each of Y, C, M, and BK is very slightly copied.

3) Patch for each of C, M, Y, BK
- The patch density is identical between patches or not reversed.
- The patch density is changed gradually.

Patch A of each of Y, M, C, and BK are not copied.

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

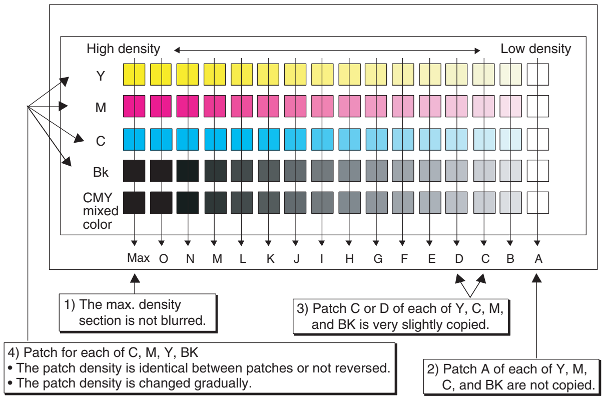
The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

(Method 2)

By printing the color balance adjustment sheet with SIM 67-25 and comparing each process (CMY) black patch color balance with the black patch, the color balance adjustment can be checked more precisely.



1) The max. density section is not blurred.

3) Patch C or D of each of Y, C, M, and BK is very slightly copied.

4) Patch for each of C, M, Y, BK
- The patch density is identical between patches or not reversed.
- The patch density is changed gradually.

2) Patch A of each of Y, M, C, and BK are not copied.

(Method 3)

(This method cannot be used when the machine supports only the GDI mode.)

When the PCL mode is supported, use SIM 64-5 to print the print test pattern.

Set each set value to the default and press [EXECUTE] key, and the print test pattern is printed out.

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed. The density level of each color must be almost at the same level.

When the factory target is selected in the procedure 4) and the auto adjustment is executed but a satisfactory result is not obtained on the color balance and the density, use SIM 67-26 to change the factory color balance target and repeat the procedures from 1).

If a satisfactory result is not obtained with the above procedures, execute the manual color balance adjustment (ADJ 20C).

When the service target is selected in the procedure 4) and the auto adjustment is executed but a satisfactory result is not obtained, execute the manual color balance adjustment (ADJ 21C).

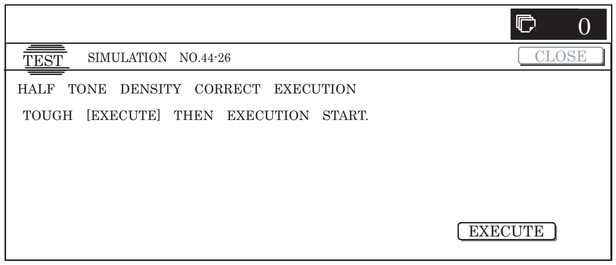
7) Cancel SIM 67-25.

   For the machine which supports only the GDI mode, the adjustment is completed.

8) Use SIM 44-26 to execute the half tone image correction (forcible execution).

   Enter the SIM 44-26 mode, and press [EXECUTE] key.

   [EXECUTE] key is highlighted and the operation is started.



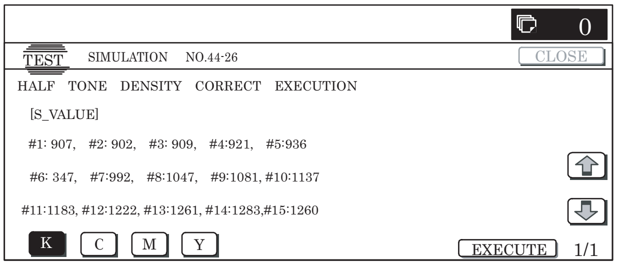
SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

TOUGH [EXECUTE] THEN EXECUTION START.

It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))



SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

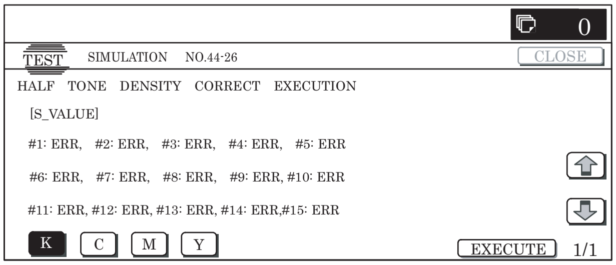
[S_VALUE]

#1: 907, #2: 902, #3: 909, #4:921, #5:936

#6: 347, #7:992, #8:1047, #9:1081, #10:1137

#11:1183, #12:1222, #13:1261, #14:1283,#15:1260

(Abnormal end (Auto transition))



SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

[S_VALUE]

#1: ERR, #2: ERR, #3: ERR, #4: ERR, #5: ERR

#6: ERR, #7: ERR, #8: ERR, #9: ERR, #10: ERR

#11: ERR, #12: ERR, #13: ERR, #14: ERR,#15: ERR

9) After completion of the operation, cancel SIM 44-26.

10) Use SIM 64-5 to print the print test pattern and check the print color balance and the density again.

Set each set value to the default and press [EXECUTE] key. The print test pattern is printed out.

If a satisfactory result on the print color balance and the density is not obtained with the automatic adjustment, execute the manual adjustment (SIM 67-25) (ADJ 21B).

21-B Printer color balance adjustment (Manual adjustment)

This adjustment is required in the following cases.

* When the copy color balance/density adjustment is required. Refer to the page of the ADJ print color balance/density adjustment.

* After execution of the copy color balance/density adjustment.

a. General

The color balance adjustment (Manual adjustment) is used to adjust the copy density (15 points for each color) of each color (CMYK) manually when the automatic adjustment cannot obtain the specified result or when a fine adjustment is required or when the user requests to change (customize) the color balance.

In this adjustment, only the patch of each color is adjusted in the above case where the automatic adjustment cannot obtain the specified result.

When the color balance is lost, execute the automatic color balance adjustment in advance and execute this adjustment for better efficiency.

b. Note for execution of the color balance adjustment (Manual adjustment)

1) The copy color balance adjustment must have been completed properly.

2) When setting the color patch image adjustment pattern on the document table, place 5 sheets of white paper on the color patch image adjustment pattern.

3) Be sure to use the specified paper for color.

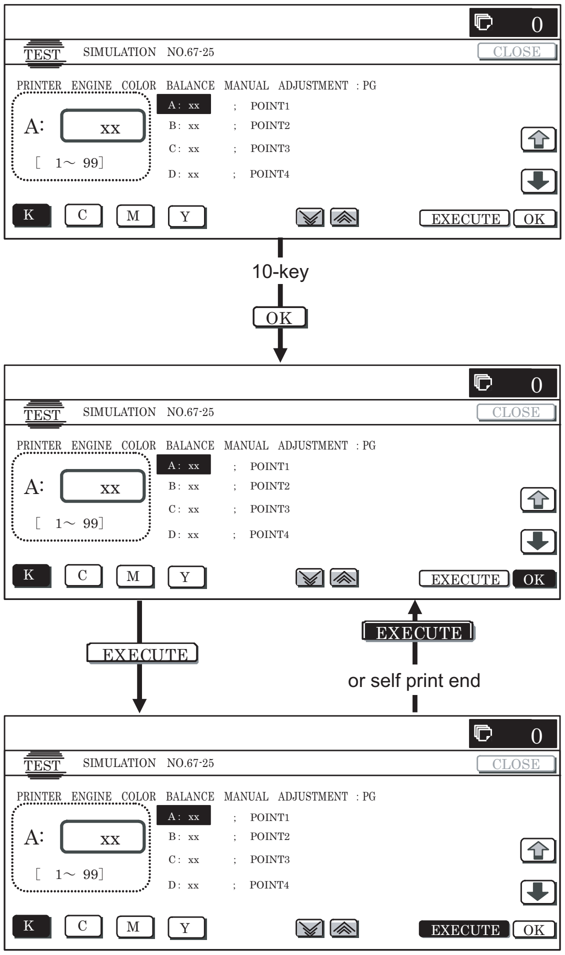
4) Before execution of the image quality check and the image quality adjustment, be sure to execute the following corrections forcibly to set the image forming section to the optimum state.

   * Execute the high density image correction (Process correction) forcibly. (SIM 44-6)

   * Execute the half tone image correction forcibly. (SIM 44-26)

c. Adjustment procedure

1) Enter the SIM 67-25 mode.


0
TEST
CLOSE
K
C
M
Y
EXECUTE
OK
10-key
OK
EXECUTE
EXECUTE
or self print end

SIMULATION NO.67-25

PRINTER ENGINE COLOR BALANCE MANUAL ADJUSTMENT : PG

A: xx

[1~ 99]

A : xx ; POINT1

B : xx ; POINT2

C : xx ; POINT3

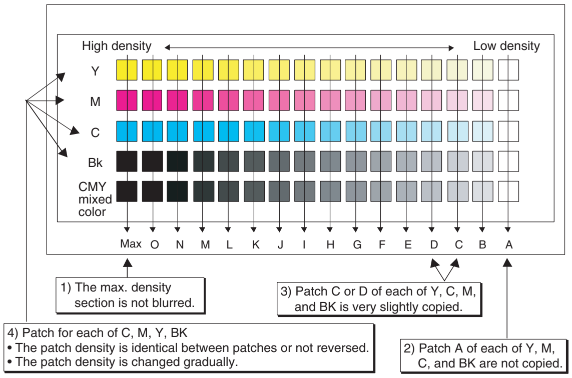
D : xx ; POINT4

2) Press [EXECUTE] key. (A3 or 11" x 17" paper is automatically selected.)

The color balance adjustment pattern is printed.

3) Check that the following specification is satisfied or the desired color balance is obtained.

If the above specification is not satisfied, perform the following procedures.


High density
Low density
Y
M
C
Bk
CMY mixed color
Max
O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
1) The max. density section is not blurred.
3) Patch C or D of each of Y, C, M, and BK is very slightly copied.
4) Patch for each of C, M, Y, BK
• The patch density is identical between patches or not reversed.
• The patch density is changed gradually.
2) Patch A of each of Y, M, C, and BK are not copied.

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed.

The density level of each color must be almost at the same level.

Patch B may not be copied.

Patch A must not be copied.

When, however, the color balance is adjusted according to a request from the user, there is no need to set to the standard color balance stated above.

4) Select the color to be adjusted with the color select key, and select the adjustment point with the scroll key.

5) Enter the adjustment value with 10-key and press [OK] key.

The adjustment value is set in the range of 245 – 755 (1 – 999). When SIM 67-24 is used to adjust the automatic color balance and density, all the set values of this simulation are set to 500.

To increase the density, increase the adjustment value. To decrease the density, decrease the adjustment value.

Repeat procedures of 2) – 5) until the condition of 3) is satisfied.

When the overall density is low, or when the density is high and patch A is copied, use the arrow key to adjust all the adjustment values of A – O to a same level collectively.

Then, adjust each patch density individually. This is an efficient way of adjustment.

Referring to the black and gray patches, adjust so that each process (CMY) black/gray patch color balance of A – O approaches the black/gray patch level as far as possible.

6) Cancel SIM 67-25.

(For the machine which supports only the GDI mode, the adjustment is completed.)

7) Use SIM 64-5 to print the print test pattern.

NOTE: Only for the machine which support the PCL mode. (For the machine which supports only the GDI mode, this procedure cannot be used.)

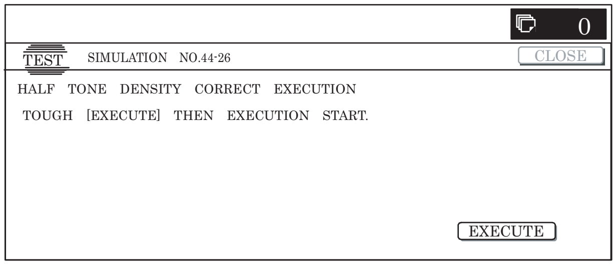
Set each set value to the default and press [EXECUTE] key. The print test pattern is printed out.

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed. The density level of each color must be almost at the same level.

8) Use SIM 44-26 to execute the half tone image correction (forcible execution).

Enter the SIM 44-26 mode and press [EXECUTE] key.

[EXECUTE] key is highlighted and the operation is started.


0
TEST
CLOSE
EXECUTE

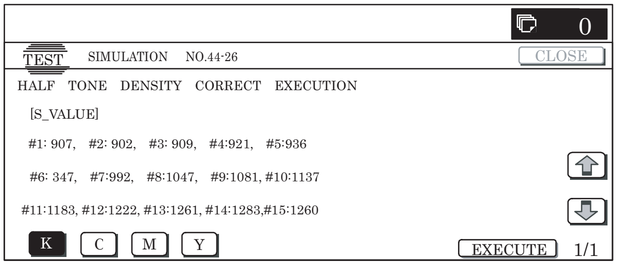
SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

TOUGH [EXECUTE] THEN EXECUTION START.

It takes several minutes to complete the operation. After completion of the operation, "COMPLETE" is displayed.

(Normal end (Auto transition))


0
TEST
CLOSE
K
C
M
Y
EXECUTE
1/1

SIMULATION NO.44-26

HALF TONE DENSITY CORRECT EXECUTION

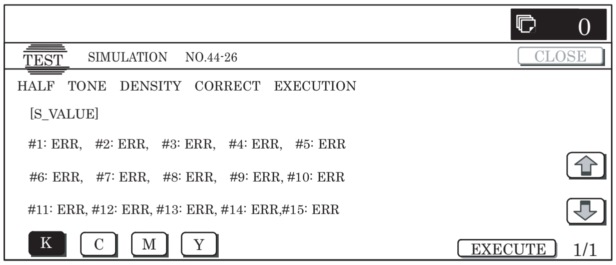
[S_VALUE]

#1: 907, #2: 902, #3: 909, #4:921, #5:936

#6: 347, #7:992, #8:1047, #9:1081, #10:1137

#11:1183, #12:1222, #13:1261, #14:1283,#15:1260

(Abnormal end (Auto transition))



HALF TONE DENSITY CORRECT EXECUTION

[S_VALUE]

#1: ERR, #2: ERR, #3: ERR, #4: ERR, #5: ERR

#6: ERR, #7: ERR, #8: ERR, #9: ERR, #10: ERR

#11: ERR, #12: ERR, #13: ERR, #14: ERR,#15: ERR

9) After completion of the operation, cancel SIM 44-26.

10) Use SIM 64-5 to print the print test pattern again.

Set each set value to the default and press [EXECUTE] key. The print test pattern is printed out.

The print density must be changed gradually from the lighter level to the darker level. The density changing direction must not be reversed. The density level of each color must be almost at the same level.

If the color balance is customized, use SIM 67-27 to register the color balance as the service target.

If the color balance is not customized, this procedure is not required.

If the customized color balance is registered as the service target, the automatic color balance adjustment can be made in the next color balance adjustment.

In the next color balance adjustment, select the service target color balance in the automatic color balance adjustment mode to make an adjustment to the similar color balance as the registered color balance.

(Auto color balance adjustment service color balance target gamma setting)

a. General

When the automatic color balance adjustment is executed, a certain color balance (gamma) is used as the target.

There are following three kinds of the target.

- Factory color balance (gamma) target
- Service color balance (gamma) target
- User color balance (gamma) target

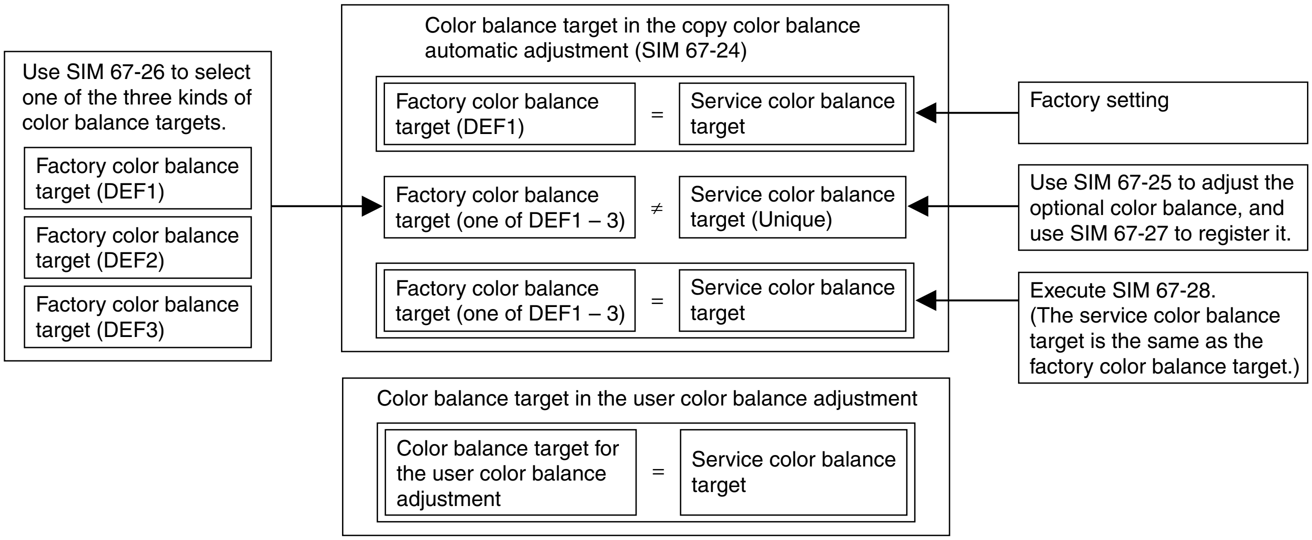
In the above three, only the service color balance target can be set to a desired level.

This adjustment is required in the following cases.

- * When the copy color balance/density adjustment (manual adjustment) is executed with SIM 67-25.
- * When a U2 trouble occurs.
- * When the MFP PWB is replaced.
- * When the EEPROM on the MFP PWB is replaced.
- * When the user requests for customizing the color balance.
- * When the service color balance target gamma is judged as improper.
- Color balance target for the printer color balance adjustment

Kind		Descriptions
A	Factory color balance (gamma) target	There are three kinds of the color balance target, and each of them is specified according to the machine design. Use SIM 67-26 to select one of them as the factory target. The default setting (factory setting) is the color balance (DEF1) which emphasizes color reproduction.
B	Service color balance (gamma) target	This target is used when the user requests to customize the color balance to user’s desired level. In advance, the user’s unique color balance must be registered as the service color balance target. The above registration (setting) is made by the serviceman with SIM 67-25 to adjust the color balance and with SIM 67-27 to register it. This color balance target is used when the user executes the color balance adjustment. When, therefore, the service color balance target is changed, the color balance target of the user’s color balance adjustment is also changed. When, however, SIM 67-28 is executed, the color balance is set to the factory color balance target set with SIM 67-26. The default setting (factory setting) of the color balance is same as the factory color balance target. (Emphasized on color reproduction (DEF1)) If the user does not request for customizing the color balance, be sure to use SIM 67-28 to set the color balance to the factory color balance target.
C	User color balance (gamma) target	Same color balance as the service color balance (gamma) target When the service color balance target is changed, this color balance target is also changed accordingly.

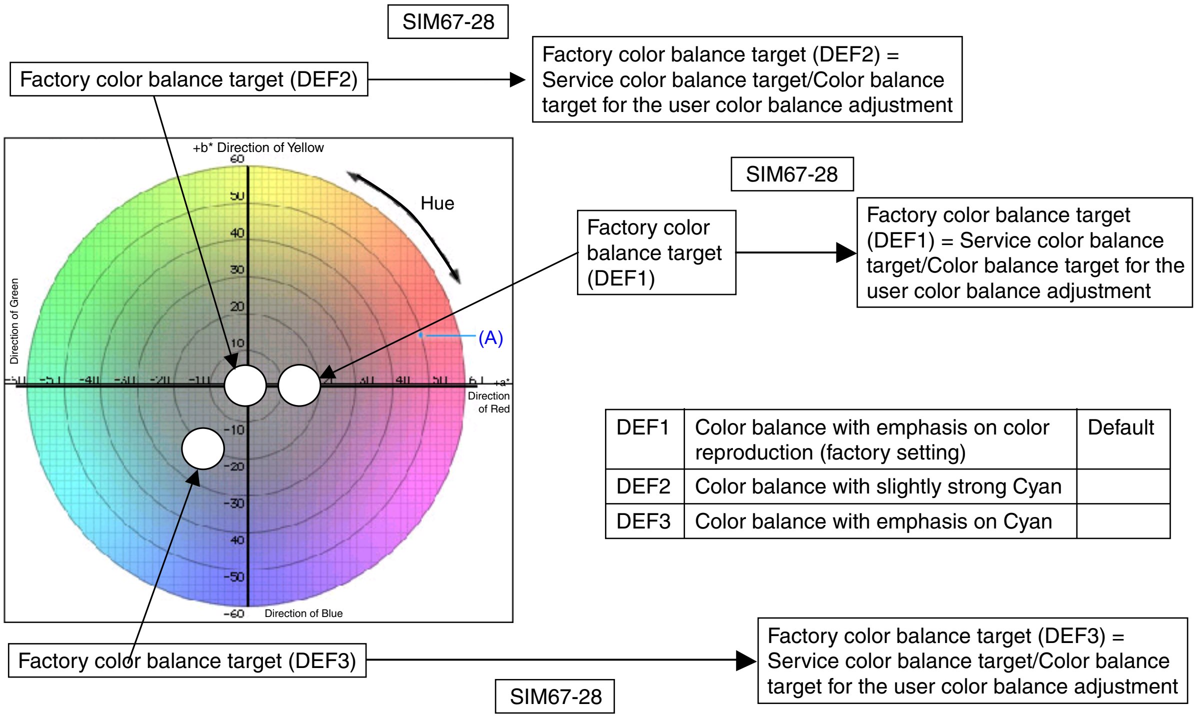
- Relationship between the factory target and the service target and the color balance target for the user color balance adjustment in the printer color balance adjustment (SIM 67-24)


Use SIM 67-26 to select one of the three kinds of color balance targets.
Factory color balance target (DEF1)
Factory color balance target (DEF2)
Factory color balance target (DEF3)
Color balance target in the copy color balance automatic adjustment (SIM 67-24)
Factory color balance target (DEF1)
=
Service color balance target
Factory color balance target (one of DEF1 – 3)
≠
Service color balance target (Unique)
Factory color balance target (one of DEF1 – 3)
=
Service color balance target
Factory setting
Use SIM 67-25 to adjust the optional color balance, and use SIM 67-27 to register it.
Execute SIM 67-28. (The service color balance target is the same as the factory color balance target.)
Color balance target in the user color balance adjustment
Color balance target for the user color balance adjustment
=
Service color balance target

- Factory target in the printer color balance adjustment (SIM 67-24)

  By use of SIM 67-26, one of the following color balances can be set as the factory color balance target.

  Each of the three color balances cannot be changed. (Fixed)


SIM67-28
Factory color balance target (DEF2)
Factory color balance target (DEF2) = Service color balance target/Color balance target for the user color balance adjustment
+b* Direction of Yellow
60
50
40
30
20
10
-10
-20
-30
-40
-50
-60
Direction of Blue
Direction of Green
+a* Direction of Red
Hue
(A)
SIM67-28
Factory color balance target (DEF1)
Factory color balance target (DEF1) = Service color balance target/Color balance target for the user color balance adjustment
Factory color balance target (DEF3)
SIM67-28
Factory color balance target (DEF3) = Service color balance target/Color balance target for the user color balance adjustment

DEF1	Color balance with emphasis on color reproduction (factory setting)	Default
DEF2	Color balance with slightly strong Cyan	
DEF3	Color balance with emphasis on Cyan	

- Service color balance target in the copy color balance adjustment (SIM 67-28).

  For the service color balance target, an optional color balance can be adjusted with SIM 67-25 and registered with SIM 67-27. When, however, SIM 67-28 is executed, the color balance is set to the same balance as the factory color balance target set with SIM 67-26.

- Color balance target in the user color balance adjustment

  This color balance is same as the service color balance target in the copy color balance adjustment (SIM 67-24). When, therefore, the service color balance target is changed, this target is also changed accordingly.

(Meaning of the service color balance target gamma data and the purpose of registration)

This procedure must be executed only when the color balance is customized with SIM 67-25.

If the color balance is not customized, this procedure is not required.

After completion of the customized color balance adjustment (Manual) with SIM 67-25 according to the user's request, use SIM 67-27 to register the service color balance target data by use of the printed adjustment pattern.

By this procedure, the service color balance target is revised.

It is recommendable to keep the printed adjustment pattern with SIM 67-25. This adjustment pattern can be used to register the same color balance target to another machine.

It is also useful to register the service color balance target data.

Do not fold it and keep it under the circumstances which protect it from discoloration and dirt.

The service color balance target data are basically registered immediately after the color balance adjustment (Manual) with SIM 67-25.

If a considerable time has passed after completion of the color balance adjustment (Manual) with SIM 67-25, the color balance of the adjustment pattern at the time of adjustment differs from the color balance of the adjustment pattern printed after a considerable time. Never use such a pattern for the adjustment.

The correctness of the service color balance target data can be judges as follows.

Select the service color balance target with SIM 67-24 and execute the color valance adjustment (Auto), and check the adjustment result. When the result is unsatisfactory or abnormal, the registered service target data for the color balance adjustment (Auto) may be improper.

This may be caused when an improper or abnormal color balance adjustment pattern was used to register the service color balance target data for the color balance adjustment with SIM 67-27.

The color balance adjustment pattern used in registration was made and printed by the color balance adjustment (Manual) with SIM 67-25. This procedure may have been executed erroneously.

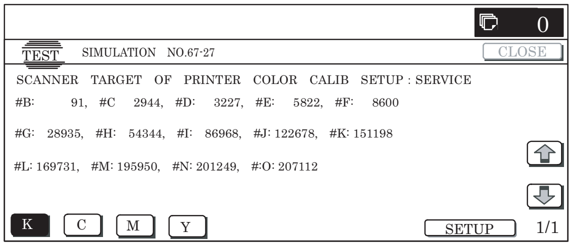
b. Setting procedure

(Setting procedure of an optional color balance (gamma) as the service color balance target)

1) Use SIM 67-25 (Printer color balance adjustment (manual adjustment) mode) to print two sheets of the color patch image (adjustment pattern).

   If the color balance is shifted from the standard, an adjustment is required. If not, an adjustment is not required. When an optional color balance is requested by the user, make an adjustment.

2) Enter the SIM 67-27 mode.



```
SCANNER   TARGET   OF   PRINTER   COLOR   CALIB   SETUP : SERVICE
#B:       91,  #C    2944,  #D:    3227,  #E:    5822,  #F:    8600

#G:   28935,  #H:   54344,  #I:   86968,  #J: 122678,  #K: 151198

#L: 169731,  #M: 195950,  #N: 201249,  #:O: 207112
```

3) Press [SETUP] key.

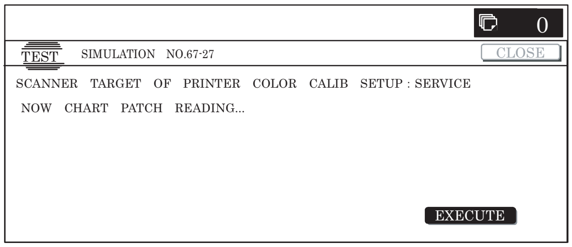
4) Set the color patch image (adjustment pattern) correctly adjusted and printed in the printer color balance adjustment (Manual adjustment) (SIM 67-25) (ADJ 21C) on the document table.

   A color patch image (adjustment pattern) printed by another machine can be used.

   Set the pattern so that the light density side is on the left side. Place 5 sheets of white paper on the color patch image (adjustment pattern).

   If the color balance could not be adjusted satisfactorily with SIM 67-25 (Color balance adjustment (Manual)), do not execute SIM 67-27 to register the service color balance target data.

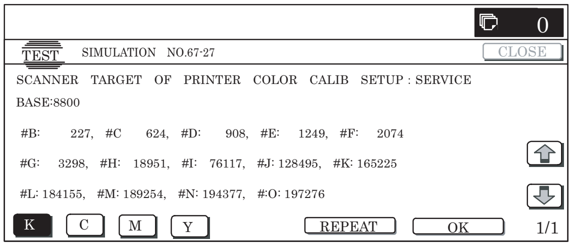
5) Press [EXECUTE] key.



```
SCANNER   TARGET   OF   PRINTER   COLOR   CALIB   SETUP : SERVICE
 NOW   CHART   PATCH   READING...
```

   The color patch image (adjustment pattern) is read.

6) Press [REPEAT] key, set the second color patch image (adjustment pattern), and execute the procedure 5) again.



```
SCANNER   TARGET   OF   PRINTER   COLOR   CALIB   SETUP : SERVICE
BASE:8800

 #B:       227,  #C      624,  #D:      908,  #E:    1249,  #F:    2074

 #G:    3298,  #H:   18951,  #I:   76117,  #J: 128495,  #K: 165225

 #L: 184155,  #M: 189254,  #N: 194377,  #:O: 197276
```

   The color balance (gamma) target set level of each color (KCMY) can be checked with K/C/M/Y keys.

   Check that the set level is increased in the sequence of B – O. If there is no variation or variation is reversed, it is judged as abnormal.

   In case of an abnormality, settle the problem and try again.

7) Press [OK] key.

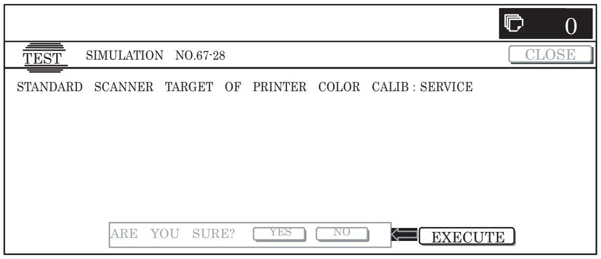
   The color balance (gamma) of the color patch image (adjustment pattern) used in the procedure 5) is set as the service target.

(Procedures to set the service color balance target and the color balance target for the user color balance adjustment to the same color balance as the factory color balance target)

This procedure must not be executed when the copy color balance was adjusted with SIM 67-25 to a unique color balance requested by the user and it was registered as the service color balance target with SIM 67-27.

* When the factory color balance target is changed with SIM 67-26, be sure to execute this procedure.

1) Enter the SIM 67-28 mode.



```
STANDARD   SCANNER   TARGET   OF   PRINTER   COLOR   CALIB : SERVICE
```

2) Press [EXECUTE] key.

3) Press [YES] key.

The service color balance target and the color balance target for the user color balance adjustment are set to the same color balance as the factory color balance target.

21-C Auto color balance adjustment by the user (Copy color balance auto adjustment ENABLE setting and adjustment)

a. General

In the user program mode, the user can execute the auto color calibration (auto adjustment of the copy color balance and density).

This adjustment is to set Enable/Disable of the above user operation with SIM 26-54.

NOTE: This setting must be set to ENABLE only when the user's understanding on the automatic adjustment of the copy color balance and density and the user's operational ability are judged enough to execute the adjustment.

When set to ENABLE, give enough explanations on the operating procedures, notes, and operations to the user.

This adjustment is required in the following cases.

* When a U2 trouble occurs.

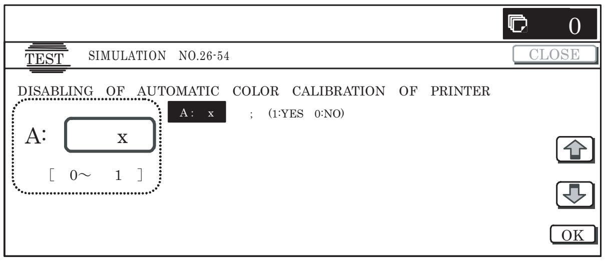
* When the PCU PWB is replaced.

* When the EEPROM on the PCU PWB is replaced.

- * When the MFP PWB is replaced.
- * When the EEPROM on the MFP PWB is replaced.

b. Setting procedure

1) Enter the SIM 26-54 mode.



SIMULATION NO.26-54

DISABLING OF AUTOMATIC COLOR CALIBRATION OF PRINTER

A: x ; (1:YES 0:NO)

A: x

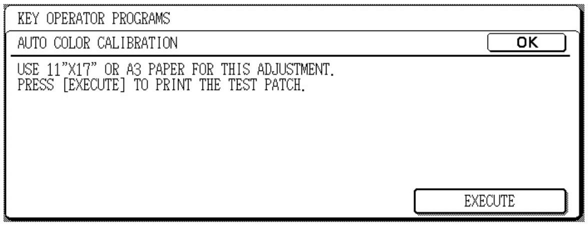
[0~ 1]

2) Select ENABLE or DISABLE with 10-key.
   When disabling, set to "0" (NO).
   When enabling, set to "1" (Yes).
3) Press [OK] key.
   When set to DISABLE, the menu of the user auto color calibration (automatic adjustment of printer color balance and density) is not displayed in the user program mode.

(Auto color calibration by the user (Auto color balance adjustment))

Remark: This adjustment is based on the service target color balance set with SIM 67-27 or SIM 67-28. If, therefore, the above settings are not properly performed, this adjustment cannot be made properly.

1) Enter the system setting mode.
2) Enter the printer setting mode.
3) Press the auto color calibration key.
4) Press [EXECUTE] key.



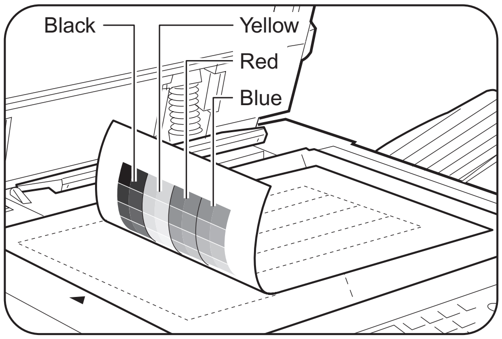
KEY OPERATOR PROGRAMS

AUTO COLOR CALIBRATION

USE 11"X17" OR A3 PAPER FOR THIS ADJUSTMENT.
PRESS [EXECUTE] TO PRINT THE TEST PATCH.

The color patch image (adjustment pattern) is printed out.

5) Set the color patch image (adjustment pattern) printed in procedure 4) on the document table. Set the patch image so that the light density area is on the left side.
   At that time, place 5 sheets of white paper on the above color patch image (adjustment pattern).



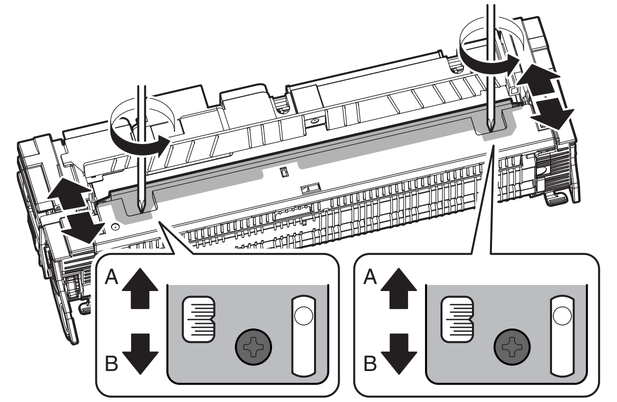
6) Press [EXECUTE] key, and the copy color balance adjustment is executed automatically. After completion of the adjustment, the display returns to the original operation screen.

22 Fusing paper guide position adjustment

This adjustment must be executed in the following cases:

- * When the fusing section is disassembled.
- * When a paper jam occurs in the fusing section.
- * When a wrinkle is made on paper in the fusing section.
- * When an image deflection or image blur occurs in the paper rear edge section.

1) Loosen the C fixing screw.
2) Shift the fusing paper guide in the arrow direction A or B (up and down direction).



The standard fixing position is the center of the marking scale. Change the position depending on the situation.

- * When a wrinkle is formed on paper, change the position upward (in the arrow direction A).
- * When an image deflection or image blur occurs in the paper rear edge section, shift the position downward (in the arrow direction A).

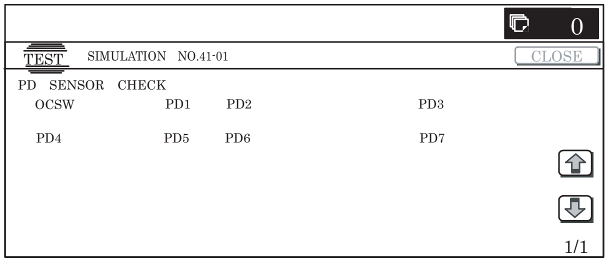
23 Document size sensor adjustment

This adjustment is required in the following cases:

- * When the document size sensor section is disassembled.
- * When the document size sensor section is replaced.
- * When a U2 trouble occurs.
- * When the scanner control PWB is replaced.
- * When the EEPROM on the scanner control PWB is replaced.

23-A Document size sensor detection point adjustment

1) Enter the SIM 41-1 mode.



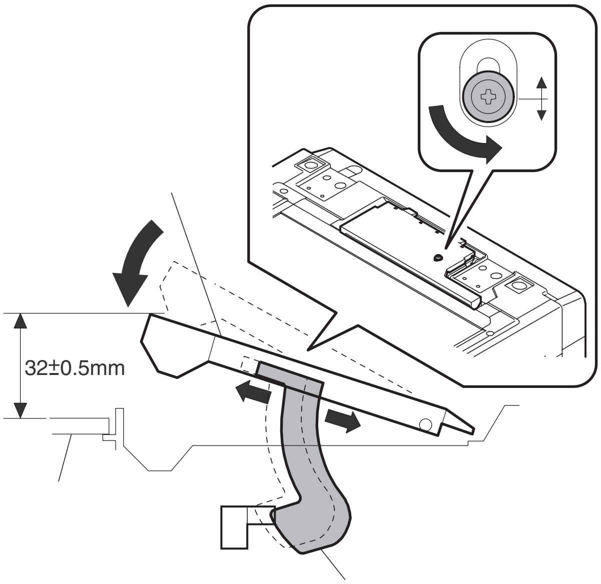
SIMULATION NO.41-01

PD SENSOR CHECK

OCSW PD1 PD2 PD3

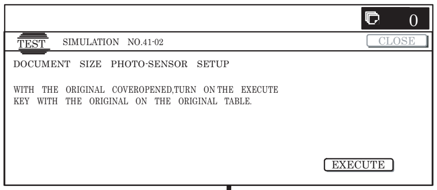
PD4 PD5 PD6 PD7

Slowly tilt the document detection arm unit in the arrow direction. Loosen the original cover switch actuator adjustment screw so that the display OCSW is returned to the normal display when the height of the arm unit top from the table glass is 32 ± 0.5mm. Slide the actuator position and adjust. (If the ON timing of the original cover switch is shifted, the document detection function may malfunction.)



23-B Document size sensor sensitivity adjustment

1) Enter the SIM41-2 mode.

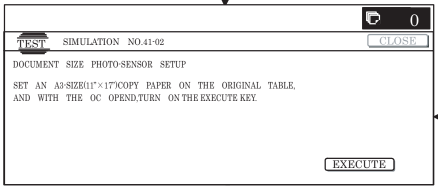


SIMULATION NO.41-02

DOCUMENT SIZE PHOTO-SENSOR SETUP

WITH THE ORIGINAL COVEROPENED,TURN ON THE EXECUTE KEY WITH THE ORIGINAL ON THE ORIGINAL TABLE.

EXECUTE



SIMULATION NO.41-02

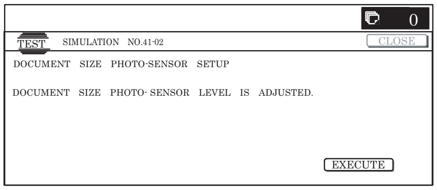
DOCUMENT SIZE PHOTO-SENSOR SETUP

SET AN A3-SIZE(11"×17")COPY PAPER ON THE ORIGINAL TABLE, AND WITH THE OC OPEND,TURN ON THE EXECUTE KEY.

Adjustment failed

Adjustment completed

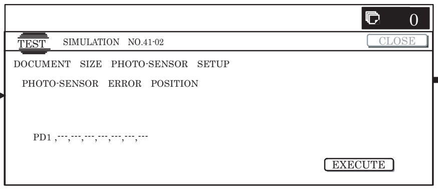
EXECUTE



SIMULATION NO.41-02

DOCUMENT SIZE PHOTO-SENSOR SETUP

DOCUMENT SIZE PHOTO- SENSOR LEVEL IS ADJUSTED.



SIMULATION NO.41-02

DOCUMENT SIZE PHOTO-SENSOR SETUP

PHOTO-SENSOR ERROR POSITION

PD1 ,---,---,---,---,---,---,---

2) Execute the sensor adjustment without document.

   With the document cover open, without placing a document on the table glass, press [EXECUTE] key.

3) Place A3 (11" x 17") paper on the document table and press [EXECUTE] key.

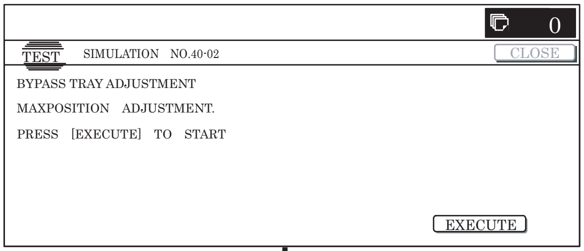
   If the adjustment is completed normally, "DOCUMENT PHOTO SENSOR LEVEL IS ADJUESTED" is displayed.

24 Manual paper feed tray paper size (width) sensor adjustment

This adjustment is required in the following cases:

* When the manual paper feed tray section is disassembled.
* When the manual paper feed tray unit is replaced.
* When a U2 trouble occurs.
* When the PCU PWB is replaced.
* When the EEPROM on the PCU PWB is replaced.

1) Enter the SIM 40-2 mode.



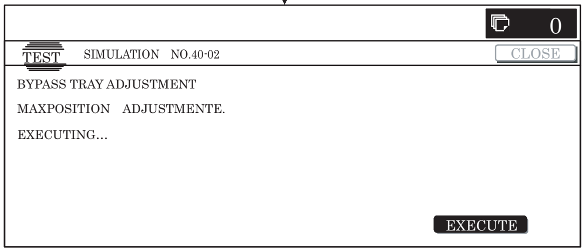
SIMULATION NO.40-02

BYPASS TRAY ADJUSTMENT

MAXPOSITION ADJUSTMENT.

PRESS [EXECUTE] TO START

EXECUTE

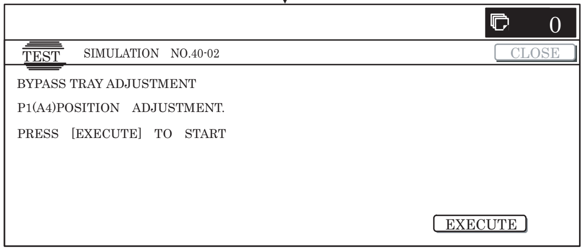


SIMULATION NO.40-02

BYPASS TRAY ADJUSTMENT

MAXPOSITION ADJUSTMENTE.

EXECUTING...



SIMULATION NO.40-02

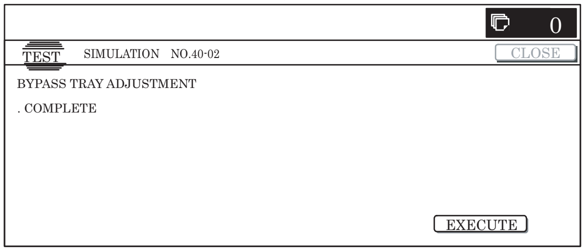
BYPASS TRAY ADJUSTMENT

P1(A4)POSITION ADJUSTMENT.

PRESS [EXECUTE] TO START

EXECUTE

Repeat the above procedure to adjust the A4R width MIN POSITION.

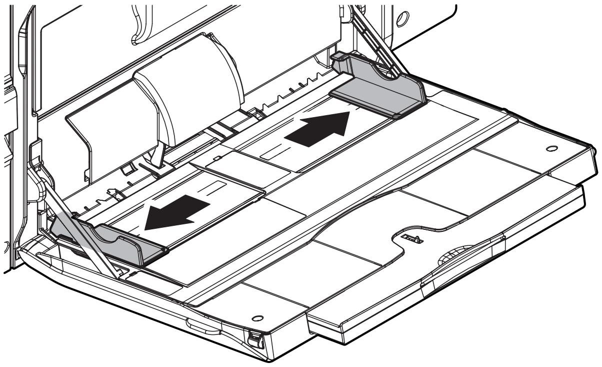


SIMULATION NO.40-02

BYPASS TRAY ADJUSTMENT

. COMPLETE

2) Set the manual paper feed guide to the maximum width position.



3) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

The maximum width position detection level of the manual paper feed guide is recognized.

4) Set the manual paper feed guide to the A4 size.
5) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

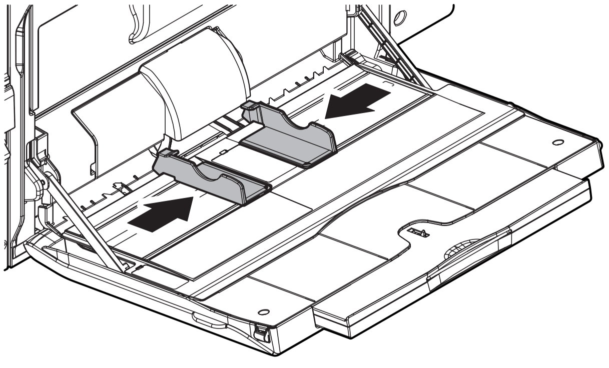
The A4 size width position detection level of the manual paper feed guide is recognized.

6) Set the manual paper feed guide to the A4R size width.
7) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

The A4R size width position detection level of the manual paper feed guide is recognized.

8) Set the manual paper feed guide to the minimum width position.



9) Press [EXECUTE] key.

[EXECUTE] key is highlighted. Then it returns to the normal display.

The minimum width position detection level of the manual paper feed guide is recognized.

If the above operation is not completed normally, "ERROR" display is highlighted.

When the operation is completed normally, the above data are saved to the memory and "COMPLETE" is displayed.

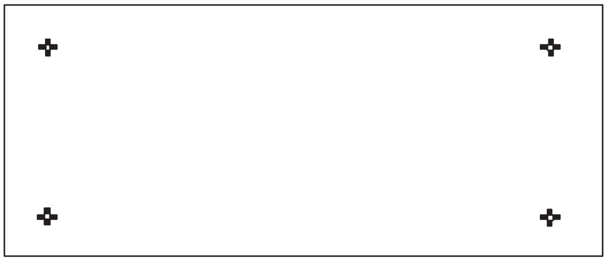
25 RSPF tray paper size (width) sensor adjustment (Refer to the MX-RPX1 SM.)

26 Touch panel coordinate setting

This adjustment is required in the following cases:

* When the operation panel is replaced.
When a U2 trouble occurs.
When the scanner control PWB is replaced.
When the EEPROM on the scanner control PWB is replaced.

1) Enter the SIM65-1 mode.



2) Precisely press the cross mark points (4 positions).

When the cross mark is pressed precisely, a buzzer sounds and the display is reversed. When all the four points are pressed and the touch panel adjustment is completed, the display returns to the simulation sub number entry screen.

In case of an error, the display returns to the entry screen again.

Check to confirm that there is no shift between the display frame and the detection position when the touch panel is pressed.

* When pressing the touch panel, never use a sharp tip (such as a needle or a pin).

27 Image loss, void area, image off-center, image magnification ratio auto adjustment with SIM50-28

The following adjustment items can be executed automatically with SIM50-28.

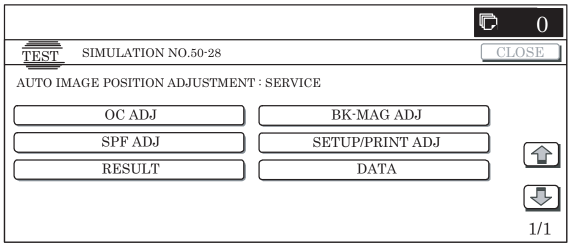
* ADJ 8 Print image magnification ratio adjustment (Main scanning direction) (Print engine section)
* ADJ 9 Image off-center adjustment (Print engine section)
* ADJ 14/15 Scan image magnification ratio adjustment
* ADJ 16 Scan image off-center adjustment
* ADJ 17 Print area (void area) adjustment (Print engine section)
* ADJ 18 Copy image position, image loss adjustment

(Menu in SIM50-28 mode)

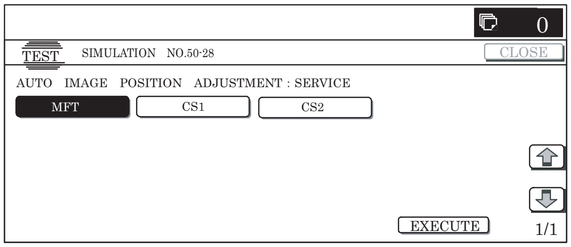
Display/Item	Content
OC ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (Document table mode)
BK-MAG ADJ	Main scanning direction image magnification ratio adjustment
SPF ADJ	Image loss off-center sub scanning direction image magnification ratio adjustment (RSPF mode)
SETUP/PRINT ADJ	Print lead edge adjustment, image off-center (each paper feed tray, duplex mode) adjustment
RESULT	Adjustment result display
DATA	Display of data used when an adjustment is executed

27-A Print image main scanning direction image magnification ratio automatic adjustment

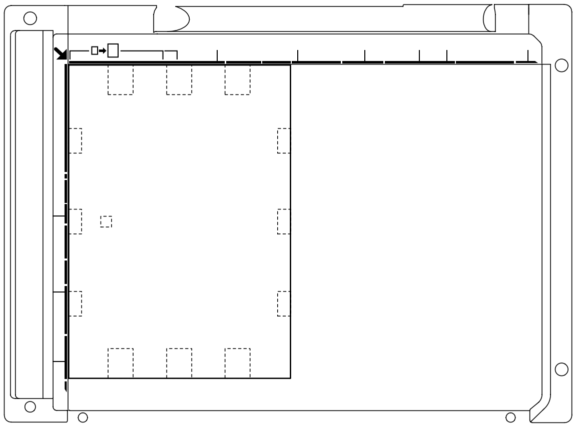
1) Enter the SIM50-28 mode.
2) Select [BK-MAG ADJ] with the key button.


0
TEST
SIMULATION NO.50-28
CLOSE
AUTO IMAGE POSITION ADJUSTMENT : SERVICE
OC ADJ
BK-MAG ADJ
SPF ADJ
SETUP/PRINT ADJ
RESULT
DATA
1/1

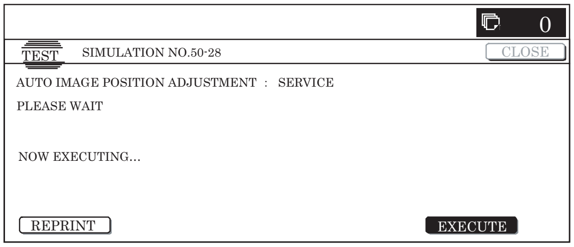
3) Select the paper feed tray with paper in it with the key button. (Any paper size will do.)


0
TEST
SIMULATION NO.50-28
CLOSE
AUTO IMAGE POSITION ADJUSTMENT : SERVICE
MFT
CS1
CS2
EXECUTE
1/1

4) Press [EXECUTE] key.
   The adjustment pattern is printed out.
5) Set the adjustment pattern on the document table. (Any direction)
   Note: Fit the adjustment pattern correctly with the document guide.



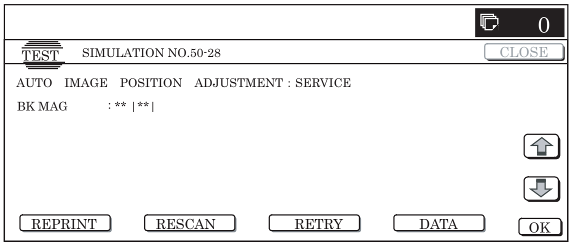
6) Press [EXECUTE] key.


0
TEST
SIMULATION NO.50-28
CLOSE
AUTO IMAGE POSITION ADJUSTMENT : SERVICE
PLEASE WAIT
NOW EXECUTING...
REPRINT
EXECUTE

The following item is automatically adjustment.

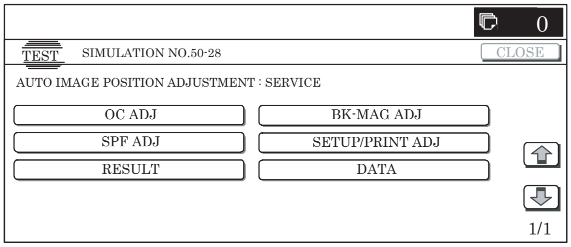
* Print image main scanning direction image magnification ratio

7) Press [OK] key.
   The adjustment result becomes valid.

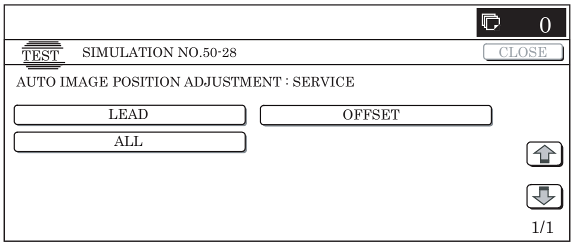

0
TEST
SIMULATION NO.50-28
CLOSE
AUTO IMAGE POSITION ADJUSTMENT : SERVICE
BK MAG : ** [**]
REPRINT
RESCAN
RETRY
DATA
OK

27-B Image off-center automatic adjustment

1) Enter the SIM50-28 mode.
2) Select [SETUP/PRINT] ADJ with the key button.


0
TEST
SIMULATION NO.50-28
CLOSE
AUTO IMAGE POSITION ADJUSTMENT : SERVICE
OC ADJ
BK-MAG ADJ
SPF ADJ
SETUP/PRINT ADJ
RESULT
DATA
1/1

3) Select [ALL] with the key button.


0
TEST
SIMULATION NO.50-28
CLOSE
AUTO IMAGE POSITION ADJUSTMENT : SERVICE
LEAD
OFFSET
ALL
1/1

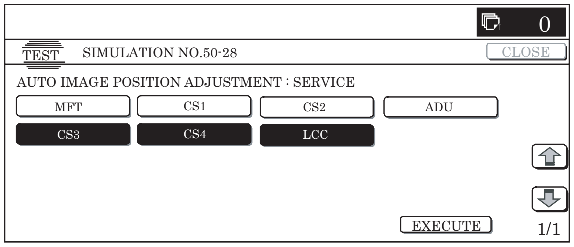
(NOTE)

By pressing [LEAD] or [OFFSET] button, the following items can be executed individually.

* [LEAD]: Print image lead edge image position adjustment

* [OFFSET]: Print image off-center adjustment
  When [ALL] is selected, both of the above two items are executed simultaneously.

4) Select a paper feed tray to be adjusted.

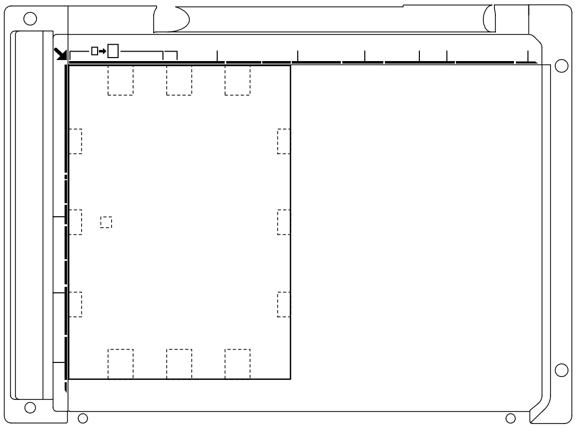

0
TEST
SIMULATION NO.50-28
CLOSE
AUTO IMAGE POSITION ADJUSTMENT : SERVICE
MFT
CS1
CS2
ADU
CS3
CS4
LCC
EXECUTE
1/1

5) Press [EXCUTE] key.

The adjustment pattern is printed out.

6) Set the adjustment pattern on the document table. (Any direction)

Note: Fit the adjustment pattern correctly with the document guide.



7) Press [EXCUTE] key.

The following items are automatically adjusted.

* Print image lead edge image position adjustment

* Print image off-center adjustment

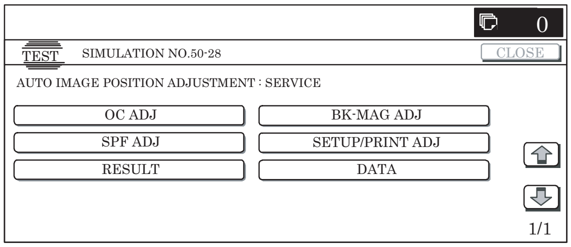
8) Press [OK] key.

The adjustment result becomes valid.

Perform procedures 4) to 7) for each paper feed tray.

27-C Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment

1) Enter the SIM50-28 mode.

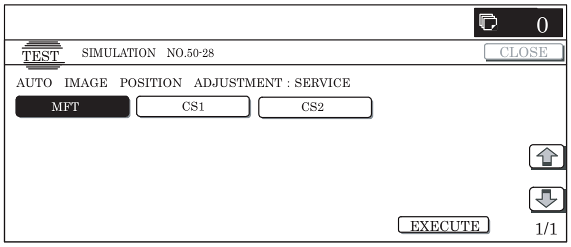


SIMULATION NO.50-28

AUTO IMAGE POSITION ADJUSTMENT : SERVICE

2) Select [OC ADJ] with the key button.

3) Select the paper feed tray with paper in it with the key button. (Any paper size will do.)



SIMULATION NO.50-28

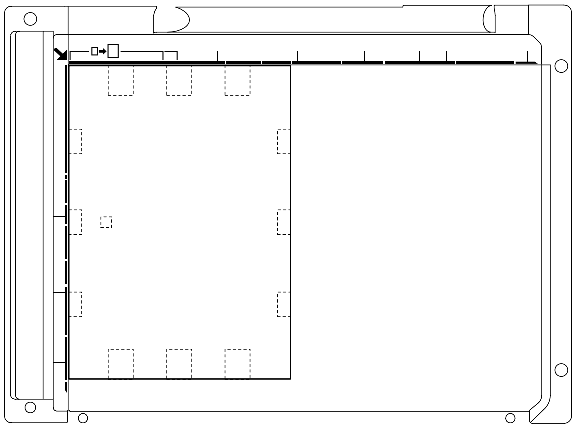
AUTO IMAGE POSITION ADJUSTMENT : SERVICE

4) Press [EXCUTE] key.

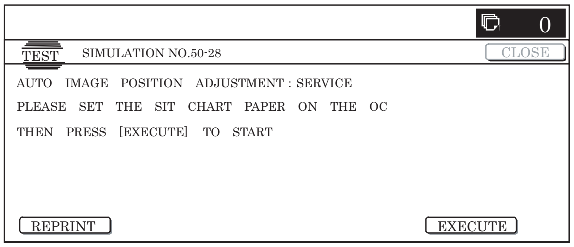
The adjustment pattern is printed out.

5) Set the adjustment pattern on the document table. (Any direction)

Note: Fit the adjustment pattern correctly with the document guide.



6) Press [EXCUTE] key.



SIMULATION NO.50-28

AUTO IMAGE POSITION ADJUSTMENT : SERVICE

PLEASE SET THE SIT CHART PAPER ON THE OC

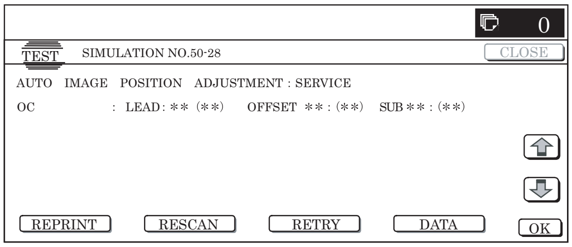
THEN PRESS [EXECUTE] TO START

The following items are automatically adjusted.

Copy lead edge image reference position adjustment, image off-center, sub scanning direction image magnification ratio automatic adjustment

7) Press [OK] key.

The adjustment result becomes valid.



SIMULATION NO.50-28

AUTO IMAGE POSITION ADJUSTMENT : SERVICE

OC : LEAD : ** (**) OFFSET ** : (**) SUB ** : (**)

27-D SPF mode image off-center, image lead edge position, sub scanning direction image magnification ratio automatic adjustment

Refer to the RSPF (MX-RPX1) SM.

[7] SIMULATION

1. General

There are the following simulation functions for grasping the machine operating conditions, troubleshooting, early detection of trouble causes, speedy setting and adjustments, and improvements in servicing.

1) Various adjustments
2) Setting of the specifications and functions
3) Canceling troubles
4) Operation check
5) Counters check, setting, clear
6) Machine operating conditions (operation hysteresis), data check, clear
7) Various (adjustments, setting, operation, counters, etc.) data transfer

The operating procedures and displays depend on the form of the operation panel of the machine.

A. Basic operation

(1) Starting the simulation

* Entering the simulation mode

1) Copy mode key ON → Program key ON → Asterisk (*) key ON → CLEAR key ON → Asterisk (*) key ON → Ready for input of a main code of simulation
2) Entering a main code with the 10-key → START key ON
3) Entering a sub code with the 10-key → START key ON
4) Select an item with the scroll key and the item key.
5) The machine enters the mode corresponding to the selected item.

   Press START key or EXECUTE key to start the simulation operation.

   To cancel the current simulation mode or to change the main code and the sub code, press the user setup key.

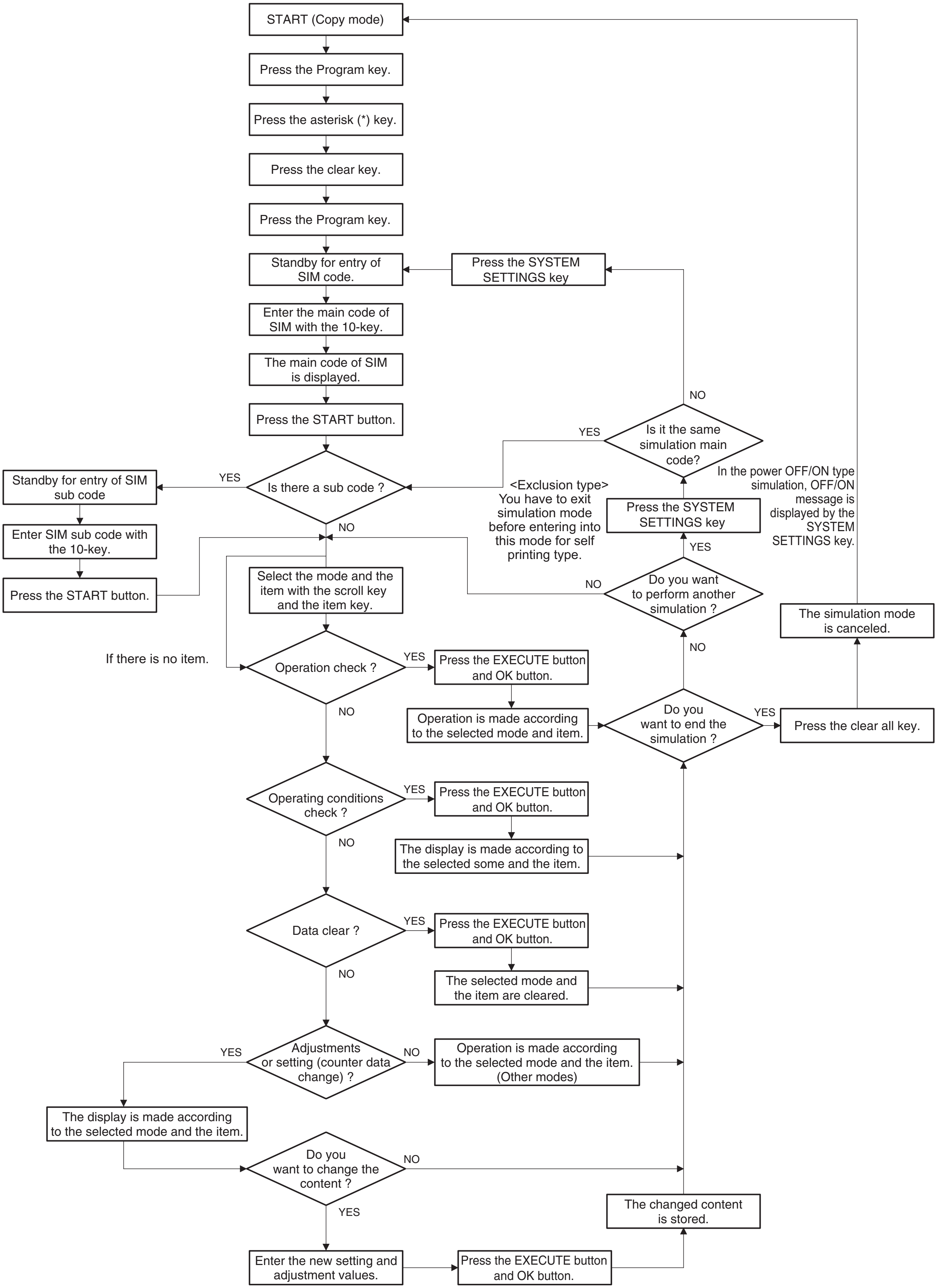
* Canceling the simulation mode to return to the normal mode

1) Press CA key.

(Note for the simulation mode)

Do not turn OFF the power switch on the operation panel when the machine is in the simulation mode.
If the power switch should be turned OFF in the simulation mode, a malfunction may be resulted. In this case, turn OFF/ON the main power source.

Basic operation flowchart


START (Copy mode)
Press the Program key.
Press the asterisk (*) key.
Press the clear key.
Press the Program key.
Standby for entry of SIM code.
Press the SYSTEM SETTINGS key
Enter the main code of SIM with the 10-key.
The main code of SIM is displayed.
Press the START button.
NO
YES
Is it the same simulation main code?
In the power OFF/ON type simulation, OFF/ON message is displayed by the SYSTEM SETTINGS key.
Standby for entry of SIM sub code
YES
Is there a sub code ?
<Exclusion type> You have to exit simulation mode before entering into this mode for self printing type.
Press the SYSTEM SETTINGS key
NO
Enter SIM sub code with the 10-key.
YES
Press the START button.
Select the mode and the item with the scroll key and the item key.
NO
Do you want to perform another simulation ?
The simulation mode is canceled.
If there is no item.
Operation check ?
YES
Press the EXECUTE button and OK button.
NO
NO
Operation is made according to the selected mode and item.
Do you want to end the simulation ?
YES
Press the clear all key.
Operating conditions check ?
YES
Press the EXECUTE button and OK button.
NO
The display is made according to the selected some and the item.
Data clear ?
YES
Press the EXECUTE button and OK button.
NO
The selected mode and the item are cleared.
YES
Adjustments or setting (counter data change) ?
NO
Operation is made according to the selected mode and the item. (Other modes)
The display is made according to the selected mode and the item.
Do you want to change the content ?
NO
YES
The changed content is stored.
Enter the new setting and adjustment values.
Press the EXECUTE button and OK button.

2. List of simulation codes

Code		Function (Purpose)	Section	Purpose
Main	Sub			
1	1	Used to check the operations of the scanner unit and its control circuit.	Optical (Image scanning)	Operation test/check
	2	Used to check the operation of sensor and detector in the scanning (read) section and the related circuit.	Optical (Image scanning)	Operation test/check
	5	Used to check the operations of the scanner unit.	Optical (Image scanning)	Operation test/check
2	1	Used to check the operations of the automatic document feeder unit and the control circuit.	RSPF	Operation test/check
	2	Used to check the operations of the sensors and detectors in the automatic document feeder unit and the related circuits.	RSPF	Operation test/check
	3	Used to check the operations of the loads in the automatic document feeder unit and the control circuits.	RSPF	Operation test/check
3	2	Used to check the operation of sensor and detector in the finisher and the related circuit.	Finisher	Operation test/check
	3	Used to check the operation of the load in the finisher and the control circuit.	Finisher	Operation test/check
	10	Used to adjust the finisher.	Finisher	Adjustment
4	2	Used to check the operations of the sensors and detectors in the desk/large capacity tray and the related circuit.	Desk/Large capacity tray (LCC)	Operation test/check
	3	Used to check the operations of the loads in the large capacity tray and the related circuit.	Desk/Large capacity tray (LCC)	Operation test/check
	5	Used to check the operations of the clutches and the related circuits.	Desk/Large capacity tray (LCC)	Operation test/check
5	1	Used to check the operation of the display, LCD in the operation panel, and control circuit.	Operation panel	Operation test/check
	2	Used to check the operation of the heater lamp and the control circuit.	Fusing	Operation test/check
	3	Used to check the operation of the scanner lamp and the circuit.	Optical (Image scanning)	Operation test/check
	4	Used to check the operation of the discharge lamp and the related circuit.	Process	Operation test/check
6	1	Used to check the operations of the paper transport system, the transfer system, the fusing system (clutches and solenoids) and the control circuits.	Paper transport section (Transport, paper exit)	Operation test/check
	2	Used to check the operations of each fan motor and its control circuit.	Other	Operation test/check
	3	Used to check the operations of the primary transfer unit and the related circuit.	Process (Transfer)	Operation test/check
7	1	Used to set the operating conditions of aging.	Other	Setting
	6	Used to set the intermittent aging cycle.	Other	Setting
	8	Used to display the warm-up time.	Fusing	Operation display
	9	Used to check printing in the color mode.	–	Operation test/check
8	1	Used to check and adjust the operations of the developing voltage of each color and the control circuit.	Process (Photoconductor/ Developing/Transfer/ Cleaning)	Operation test/Check/ Adjustment
	2	Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.	Process (Photoconductor/ Developing/Transfer/ Cleaning)	Operation test/Check/ Adjustment
	6	Used to check and adjust the operation of the transfer voltage and the control circuit.	Process (Photoconductor/ Developing/Transfer/ Cleaning)/Transfer	Operation test/Check/ Adjustment
9	2	Used to check the operations of the sensors and detectors in the duplex section and its control circuit.	Duplex	Operation test/check
	3	Used to check the operations of the loads in the duplex section and the control circuits.	Duplex	Operation test/check
10	1	Used to check the operations of the toner motor and the related circuit.	Process (Developing)	Operation test/check
13	--	Used to cancel the self-diag "U1" trouble.	FAX	Clear/cancel (Trouble etc.)
14	--	Used to cancel excluding the self-diag U1/LCC/U2/PF troubles.	–	Clear/cancel (Trouble etc.)
15	--	Used to cancel the self-diag "U6-09" (large capacity paper feed tray) trouble.	LCC	Clear/cancel (Trouble etc.)
16	--	Used to cancel the self-diag U2 trouble.	MFPcnt PWB / PCU PWB / SCU PWB	Clear/cancel (Trouble etc.)
17	--	Used to cancel the self-diag PF.	Communication unit (RIC/ MODEM)	Clear/cancel (Trouble etc.)
21	1	Used to set the maintenance cycle.	–	Setting
22	1	Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)	–	Adjustment/Setup/Operation data check
	2	Used to check the total numbers of misfeed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)	–	Adjustment/Setup/Operation data check
	3	Used to check misfeed positions and the misfeed count of each position.	–	Adjustment/Setup/Operation data check
	4	Used to check the trouble (self diag) history.	–	Adjustment/Setup/Operation data check
	5	Used to check the ROM version of each unit (section).	–	Others
	6	Used to output the list of the setting and adjustment data (simulations, FAX soft switch, counters).	–	Adjustment/Setup/Operation data check
	8	Used to check the number of use of the finisher, the RSPF, and the scan (reading) unit.	–	Adjustment/Setup/Operation data check
	9	Used to check the number of use (print quantity) of each paper feed section.	Paper feed, ADU	Adjustment/Setup/Operation data check

Code		Function (Purpose)	Section	Purpose
Main	Sub			
22	10	Used to check the system configuration (option, internal hardware).	–	Adjustment/Setup/Operation data check
	11	Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)	FAX	Adjustment/Setup/Operation data check
	12	Used to check the RSPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.)	RSPF	Adjustment/Setup/Operation data check
	13	Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).	–	Adjustment/Setup/Operation data check
	19	Used to check the values of the counters related to the scan mode and the internet FAX mode.	Scanner	Adjustment/Setup/Operation data check
	90	Used to output the various set data lists.	–	Adjustment/Setup/Operation data check
23	2	Used to check the trouble history of paper jam and misfeed. (If the number of misfeed and troubles is considerably great, it may be judged as necessary to repair.)	–	Adjustment/Setup/Operation data check
	80	Used to check the operations of the sensors and detectors in the paper feed and transport section.	Paper feed, transport	Operation test/Check
24	1	Used to clear the jam counter, and the trouble counter. (The counters are cleared after completion of maintenance.)	–	Data clear
	2	Used to clear the number of use (the number of prints) of each paper feed section.	–	Data clear
	3	Used to clear the number of use of the finisher, RSPF, and the scan (reading) unit.	–	Data clear
	4	Used to clear the maintenance counter, the printer counters of the transfer unit and the fusing unit. (After completion of maintenance, clear the counters.)	–	Data clear
	5	Used to clear the developer counter. (After replacement of developer, clear the counter.)	–	Data clear
	6	Used to clear the copy counter.	–	Data clear
	7	Used to clear the OPC drum counter. (After replacement of the OPC drum, clear the counter.)	–	Data clear
	9	Used clear the printer mode print counter and the self print mode print counter.	–	Data clear
	10	Used to clear the FAX counter. (Only when FAX is installed)	–	Data clear
	15	Used to clear the counters related to the image send.	–	Data clear
	30	Used to initialize the administrator password.	–	Data clear
	31	Used to initialize the service mode password.	–	Clear
25	1	Used to check the operations of the developing section.	Process (Developing section)	Operation test/Check
	2	Used to make the initial setting of toner concentration when replacing developer.	Process (Photoconductor/ Developing/Transfer/ Cleaning)	Setting
26	1	Used to set the paper exit tray (MX-TRX1).	Paper exit	Setting
	2	Used to set the paper size of the large capacity tray (LCC). (When the paper size is changed, this simulation must be executed to change the paper size in software.)	Paper feed	Setting
	3	Used to set the specifications of the auditor.	Auditor	Setting
	5	Used to set the count mode of the total counter and the maintenance counter.	–	Setting
	6	Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.	–	Setting
	10	Used to set the trial mode of the network scanner.	–	Setting
	18	Used to set the toner save mode.	–	Setting
	30	Used to set allow/inhibit of HL slow-up control (CE mark support control).	–	Setting
	35	Used to set the trouble memory saving procedure.	–	Setting
	38	Used to set Continue/Stop of print when the developer life is reached.	Other	Setting
	41	Used to set YES/NO of AMS setting in the center binding mode.	–	Setting
	49	Used to set the copy speed mode.	–	Setting
	50	Used to set functions.	–	Setting
	52	Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.	–	Setting
	53	Used to set YES/NO of the auto color calibration.	–	Setting
	54	Used to set the printer calibration YES/NO.	Printer	Setting
	65	Used to set the finisher alarm mode.	–	Setting
	67	Used to set the summer time (switching timing to the summer time and the adjustment time (shift amount)) and the time zone (for switching to the summer time and the difference between the local time and GMT (UTC) for synchronization with the internet time server).	–	Setting
	69	Used to set whether the toner preparation message and the toner near end message are displayed or not when the toner quantity reaches 25%.	Process	Setting
27	1	Used to set whether the detection of communication error with RIC (U7-00) is disabled or not.	Communication (RIC/ MODEM)	Operation test/Check

Code		Function (Purpose)	Section	Purpose
Main	Sub			
27	2	Used to set the FSS function (Password, HOST server TEL number).	Communication (RIC/ MODEM)	Setting
	4	Used to set the FSS functions (initializing, call, toner order auto send).	Communication (RIC/ MODEM)	Setting
	5	Used to set the tag number.	Communication (RIC/ MODEM)	Setting
	6	Used to set YES/NO of the manual service call.	Communication (RIC/ MODEM)	Setting
	7	Used to set the FSS functions (enable, alert callout).	Communication (RIC/ MODEM)	Setting
	9	Used to set the threshold value for determining whether the paper feed time between sensors is recorded or not and the threshold value for determining whether the gain adjustment retry number is recorded or not.	–	Setting
	10	Used to clear the trouble prediction history information.	Communication (RIC/ MODEM)	Data clear
	11	Used to display the serial communication retry number and the scanner gain adjustment retry number history. (for RSPF)	Communication (RIC/ MODEM)	Adjustment/Setup/Operation data output/Check (Display/Print)
	12	Used to display the high-density, half-tone process control error history and the automatic register adjustment error history.	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	13	Used to display the history of paper feed time between sensors.	–	Adjustment/Setup/Operation data output/Check (Display/Print)
	14	The FSS connection test mode setting is made.	–	Operation test/Check
30	1	Used to check the operations of the sensors and detectors in the paper feed section, the paper transport section, and the paper exit section.	Paper feed	Operation test/Check
	2	Used to check the operations of the sensors and detectors of the paper feed section and the related circuits.	Paper feed	Operation test/Check
33	1	Used to check the operations of the card reader sensor and the related circuits. (The card reader sensor operation can be monitored with the LCD display.) (Japan only)	Other	Operation test/Check
40	2	Used to adjust the detection level of the manual feed tray paper width detector.	Paper feed	Adjustment
	7	Used to set the adjustment value of the detection level of the manual paper feed tray paper width detector.	Paper feed	Setting
41	1	Used to display the operating state of the document sensor.	Other	Operation test/Check
	2	Used to adjust the detection level of the document size sensor.	Other	Operation test/Check
	3	Used to display the document sensor detection level (A/D) in real time and to display the threshold value adjusted with SIM 41-2 in [ ] beside the sensor name.	Other	Operation test/Check
43	1	Used to set the fusing temperature in each operation mode.	Fusing	Setting
	4	Used to set the fusing temperature in each operation mode. (Continued from 43-01.)	Fusing	Setting
	20	Used to correct the environments of low temperature and low humidity (L/L) for the fusing temperature setting 1 for each paper (SIM 43-0).	Fusing	Setting
	21	Used to perform correction of high temperature and high humidity (H/H) environment for the fusing temperature setting 1 (SIM 43-01) for each paper.	Fusing	Setting
	22	Used to perform L/L (low temperature, low humidity) correction for the fusing temperature setting 1 (SIM 43-04) for each paper.	Fusing	Setting
	23	Used to perform H/H (high temperature, high humidity) correction for the fusing temperature setting 1 (SIM 43-04) for each paper.	Fusing	Setting
	24	Used to enter the correction values for SIM 43-1 and SIM 43-4 temperature corrections.	Fusing	Setting
44	1	Used to set whether the correction functions of the image forming (process) section are enabled or not.	–	Setting
	2	Used to perform the light quantity adjustment of the process control sensor and the registration sensor (two for resist are adjusted simultaneously) and the surface scan.	Process	Adjustment
	4	Used to perform the correction operation of the image forming section and to set the process control sensor adjustment conditions.	Process	Setting
	6	Used to forcibly execute the correction in the image process section (high-density process correction) (process correction).	Process	Operation test/Check
	9	Used to check the data related to the result of the image forming section correction (high density process correction). (Corrected main charger grid voltage in each print mode, developing bias voltage, etc.) (This simulation is used to check whether the correction is normally executed or not.)	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	12	Used to check the sampling toner image patch density data in the image forming section correction (high density process correction). (This simulation is used to check whether the correction is normally executed or not.)	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	13	Color image density sensor adjustment (Adjustment by the jig)	Process	Adjustment
	14	Used to check the output level of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor.	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	16	Used to check data related to the toner density correction result. (This simulation allows to check that the correction is normally performed or not.)	Process (Developing)	Adjustment/Setup/Operation data output/Check (Display/Print)
	21	Used to register the half tone process control reference value (half tone correction).	Process	Setting

Code		Function (Purpose)	Section	Purpose
Main	Sub			
44	22	Used to check the toner patch image density level of each color in half tone image forming section correction (process correction). (This simulation is used to check that the correction is normally executed or not.)	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	24	(This simulation is not used in the market.) Used to display the process control result.	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	25	Used to check the initial condition of process control (half tone correction).	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	26	Used to execute the half tone process control forcibly.	Process	Adjustment
	27	Used to clear the half tone process control correction value.	Process	Data clear
	28	Used to set the timing (ON/OFF) of process control execution.	Process	Setting
	29	Enable/disable of the half tone correction during each job is switched.	Process	Setting
	31	Used to perform the phase adjustment for OPC drum deflection. (Used to adjust the phases of four OPC drums deflection.)	Process (OPC drum)	Adjustment
	43	Used to display each developing unit installing state AD value. This simulation is added to check the sampling data of the detection judgment of developing unit installation not only as the judgment result (trouble display) but also as the current state value.	Process (Developing)	Adjustment/Setup/Operation data output/Check (Display/Print)
	52	(This function is not used. Do not operate.) Used to check the toner patch image density level of each color in 1 pixel half tone correction. (The simulation is used to check whether the correction is normally executed or not.)	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	54	(This function is not used. Do not operate.) Used to display the 1 pixel half tone correction result.	Process	Adjustment/Setup/Operation data output/Check (Display/Print)
	56	(This function is not used. Do not operate.) Used to perform the forcible execution of 1 pixel half tone correction.	Process	Setting
	57	(This function is not used. Do not operate.) Used to clear the correction value of 1 pixel half tone correction.	Process	Data clear
46	1	Used to set the default exposure (color copy) for every document mode.	Scanner	Adjustment
	2	Used to adjust the exposure in BLACK copy.	Scanner	Adjustment
	4	Used to adjust the exposure of the color scanner.	Scanner	Adjustment
	5	Used to adjust the exposure of the black scanner.	Scanner	Adjustment
	8	Used to make the scanner color balance RGB adjustment (for color push scanner mode).	Scanner	Adjustment
	9	Used to adjust the exposure.	RSPF	Adjustment
	10	Used to the copy density adjustment (manual). (color mode)	Engine	Adjustment
	16	Used to the copy density adjustment (manual) [Monochrome, all modes] PG print.	Engine	Adjustment
	19	Used to set the BLACK auto exposure mode.	Scanner	Adjustment
	21	Used to perform the copy color balance manual correction. [Color, All modes]: PG print	Engine	Adjustment
	23	Used to set ENABLE/DISABLE of the half tone highest density correction.	–	Setting
	24	Used to the copy color balance auto adjustment.	Engine	Adjustment
	25	Used to execute the fine adjustment of single color mode color balance.	Image process (ICU)	Adjustment
	26	Used to reset the single color mode color balance set value to the default.	Image process (ICU)	Adjustment
	27	Used to set the engine gamma calculating formula coefficient.	Image process (ICU)	Adjustment
	28	(Information on this simulation may be requested in some cases. However, this function is basically not used in the market.) Used to check the auto exposure/Auto document recognition/ Line number recognition (Color mode). If the local memory size is less than 256MB, the operation of this simulation may not operate normally.	Image process (ICU)	Adjustment
	33	Used to execute the color auto mode adjustment.	Image process (ICU)	Setting
	36	Used to perform the fine adjustment of 2-color (Red, Black) copy.	–	Adjustment
	37	Used to perform the BLACK image forming adjustment.	–	Adjustment
	39	Used to execute the image send sharpness adjustment. (Only when FAX is installed)	FAX	Adjustment
	40	Used to execute the FAX exposure adjustment. (Collective adjustment of all the modes). (Only when FAX is installed)	ICU/FAX	Adjustment
	41	Used to execute the FAX exposure adjustment (Normal). (Only when FAX is installed)	ICU/FAX	Adjustment
	42	Used to execute the FAX exposure adjustment (Fine text). (Only when FAX is installed)	ICU/FAX	Adjustment
	43	Used to execute the FAX exposure adjustment (Super Fine). (Only when FAX is installed)	ICU/FAX	Adjustment
	44	Used to execute the FAX exposure adjustment (Ultra Fine). (Only when FAX is installed)	ICU/FAX	Adjustment
	45	Used to execute the FAX exposure level adjustment and the individual setting (600DPI). (Only when FAX is installed)	FAX	Adjustment
	47	Used to set the JPEG compression rate in Copy/Scanner (PUSH SCAN).	–	Setting
48	1	Used to execute the magnification adjustment in the scan system (for RSPF).	RSPF/Scanner	Adjustment

Code		Function (Purpose)	Section	Purpose
Main	Sub			
48	5	This adjustment is executed when a satisfactory result is not obtained when a different copy magnification ratio is specified and copying is made after adjustment of the sub scanning direction image magnification ratio with SIM 48-1. When there is an error in the copy magnification ratio in reduction copy, the adjustment value of high speed mode is adjusted. When there is an error in the copy magnification ratio in enlargement copy, the adjustment value of low speed mode is adjusted. This is the magnification ratio adjustment in the scan system.	RSPF/Scanner	Adjustment
	6	Used to adjust the rotating speed of each motor.	–	Adjustment
49	1	Used to execute the firmware update.	–	Version-up
	3	The Operation Manual saved in the hard disk is updated.	–	Version-up
50	1	Used to adjust the copy image position on print paper in the copy mode and to adjust the void area (image loss). (The similar adjustment can be executed with SIM50-05 and 50-02 (Simple method). (Document table mode))	–	Adjustment
	2	Used to adjust the copy image position on print paper in the copy mode and to adjust the void area (image loss). (Simple adjustment) (Similar to SIM50-01. This simulation provides the simpler method.)	–	Adjustment
	5	Used to set the lead edge adjustment value which affects only the printer print.	Printer	Adjustment
	6	Used to adjust the copy image position on the print paper in the copy mode and to adjust the void area (image loss). (The similar adjustment can be executed with SIM50-7 (Simple method).) (RSPF mode)	RSPF	Adjustment
	7	Used to adjust the copy image position on print paper in the copy mode and to adjust the void area (image loss). (The similar adjustment can be executed with SIM50-6 (Simple type).) (RSPF mode)	RSPF	Adjustment
	10	Used to adjust the print off-center for each tray. Image print center position adjustment (Adjusted for each paper feed section.)	–	Adjustment
	12	Used to execute the scan image off-center position adjustment. (Adjusted for each scan mode.)	–	Adjustment
	20	Used to execute the manual adjustment of the main scanning direction registration (color shift). (Backup value input)	–	Adjustment
	21	Used to execute the manual adjustment of the sub scanning registration (color shift). (Backup value input)	–	Adjustment
	22	Used to execute the auto adjustment of the main/sub scan the main/sub registration. (Print on the belt/ Scan with the registration sensor (photo sensor) Image registration adjustment (Auto adjustment) adjustment image quality image position	–	Adjustment
	24	Used to display the data acquired with the auto registration adjustment simulation (SIM50-22).	–	Adjustment
	27	Used to adjust the image loss of scanned image in the FAX/Scanner mode.	FAX/Scanner	Adjustment
	28	Used to execute the service adjustment, the OC adjustment, the BK main scan magnification ration correction, the RSPF adjustment, and the print position adjustment (Auto void adjustment (Service installation adjustment)).	–	Adjustment
	28	Used to adjust the OC document lead edge, off-center, and the sub scan magnification ratio. (Auto void adjustment (Service installation adjustment) (1: OC adjustment))	–	Adjustment
	28	Used to execute the BK main scan magnification ratio adjustment. (Auto void adjustment (Service instillation) (2: BK-main scan magnification ratio correction))	–	Adjustment
	28	Used to execute the RSPF (Front/Back) document lead edge, off-center, and sub scan magnification ratio adjustment. (Auto void adjustment (Service installation adjustment) (3: RSPF adjustment))	RSPF	Adjustment
	28	Used to execute the print lead edge adjustment and the all-cassette print off-center (individual cassette, ADU) adjustment. (Auto void adjustment (Service installation adjustment) (4: Print position adjustment)	–	Adjustment
	28	Used to display the adjustment result. (Auto void adjustment (Service installation adjustment) (5: result display)	–	Adjustment
	28	Used to display the data used for the adjustment. (Auto void adjustment (Service installation adjustment) (6: data display))	–	Adjustment
51	1	Used to adjust the ON/OFF timing of the transfer voltage and the separation bias voltage.	Process	Adjustment
	2	Used to adjust the contact pressure of paper against the registration roller (main unit paper feed section, duplex paper feed, SPF paper feed) on each section. (When there are much variations in print image positions for paper or when the paper jam occurs, the adjustment is required.) Used to change the deflection quantity correction value of each specified cassette.	Paper transport	Adjustment
53	6	Used to adjust the RSPF document tray size of the main unit.	RSPF	Adjustment
	7	Used to enter the adjustment value of the main unit RSPF document tray size adjustment value. SIM53-06 A/D value manual input (for RSPF).	RSPF	Adjustment
	8	Used to adjust the RSPF scan position.	RSPF	Adjustment
55	1	Used to set the engine soft SW.	PCU	Setting
	2	Used to set the scanner soft SW	Scanner	Setting
	3	Used to set the controller soft SW.	MFP	Setting

Code		Function (Purpose)	Section	Purpose
Main	Sub			
56	1	Used to execute data transfer.	MFP	Data transfer
	2	Used to backup the data (user authentication data, address book, etc.) of EEPROM, SRAM, or HDD to a USB memory and to restore the data.	Memory, HDD	Backup
60	1	Used to check read/write of the expansion DIMM installed to the ICU PWB. After completion of execution, the result of each slot is displayed on the panel. ICU PWB image DRAM read/write operation check, check ICU (memory) operation.	Image process (ICU)	Operation test/Check
	2	Used to set the data of onboard SDRAM.	–	Setting
61	1	The polygon motor rotation and the BD signal detection are checked.	LSU	Operation test/Check
	4	Used to execute self-print of the LSU position adjustment.	LSU	Adjustment
62	1	Used to execute the hard disk format (except operation manual area). * Be sure to format the HDD in FAT32.	MFP (HDD)	Data clear
	2	Used to execute the partial check of the hard disk read/write. * Be sure to format the HDD in FAT32.	MFP (HDD)	Operation test/Check
	3	Used to execute read/write check (all areas) of the hard disk. * Be sure to format the HDD in FAT32.	MFP (HDD)	Operation test/Check
	6	Used to execute the HDD self-diagnostics. * Be sure to format the HDD in FAT32.	MFP (HDD)	Operation test/Check
	7	Used to print the self-diagnostics error log. * Be sure to format the HDD in FAT32.	MFP	Operation test/Check
	8	Used to format the hard disk excluding the system area and operation manual area. * Be sure to format the HDD in FAT32.	MFP (HDD)	Data clear
	10	Used to delete the job completion list. (The job log data are also deleted.) * Be sure to format the HDD in FAT32.	MFP (HDD)	Data clear
	11	Used to delete the document filing data. * Be sure to format the HDD in FAT32.	MFP (HDD)	Data clear
	12	Used to set Enable/Disable of auto format in HDD trouble. * Be sure to format the HDD in FAT32.	MFP (HDD)	Data clear
	13	Used to format the hard disk (operation manual area only). * Be sure to format the HDD in FAT32.	MFP (HDD)	Data clear
63	1	Used to check the following values related to shading for RGB and OC. (3 x 2 = 6 kinds)	Scanner (Exposure)	Adjustment/Setup/Operation data output/Check (Display/Print)
	2	Used to execute shading forcibly.	Scanner	Adjustment
	3	Used to execute the gamma correction and density conversion for RGB image data inputted from the CCD. Gamma correction 1 of the SCAN ASIC and the set value of color correction are set by calculating from the image data.	Scanner (scan)	Adjustment
	5	Used to reset the gamma correction and color correction parameters of the SCAN ASIC.	Scanner	Adjustment
	6	Used to scan the engine color balance auto adjustment pattern and to display the sampling result.	Image process (ICU)	Adjustment/Setup/Operation data output/Check (Display/Print)
	7	Used to display and register the engine auto density adjustment scanner target value.	Image process (ICU)	Setting
	8	Used to execute the standard value reset of the engine auto adjustment scanner target value (for servicing).	Image process (ICU)	Setting
	11	Used to set the factory target color balance in the auto color balance adjustment (SIM46-24).	Scanner (Scanning)	Setting
64	1	Used to execute self-print (Color mode).	Printer	Operation test/Check
	2	Used to print the density adjustment pattern.	Printer	Adjustment/Setup/Operation data output/Check (Display/Print)
	3	Used to execute self-print. (BW mode)	Printer	Operation test/Check
	4	Used to execute self-print.	Printer	Operation test/Check
	5	Used to execute self print (PCL).	Printer	Operation test/Check
	6	Used to execute the printer self print (PS).	Printer	Operation test/Check
65	1	Used to adjust the touch panel (LCD display section) detection position.	Operation panel	Adjustment
	2	Used to check the touch panel (LCD display section) detection position adjustment result.	Operation panel	Adjustment/Setup/Operation data output/Check (Display/Print)
67	24	Use to execute the printer setting of auto color calibration.	Printer	Adjustment
	25	Used to set the manual correction of the printer engine color balance.	Printer	Adjustment
	26	Used to set the reference scanner target value of the printer engine auto density adjustment.	Printer	Adjustment
	27	Used to display and register the scanner target value (for servicing) of the printer engine auto density adjustment.	Printer	Adjustment
	28	The scanner target value (for servicing) of the printer engine auto density adjustment is reset to the standard value.	Scanner	Adjustment
	30	Used to set YES/NO of delivery of the main unit calibration data and the process control correction data to the client PC by the GDI printer.	Printer	Setting
	31	Used to clear the printer calibration value.	Printer	Data clear
	32	Used to set YES/NO of screen color change for each object.	–	Setting
	33	Used to execute the gamma correction between printer screens. (for PCL)	Printer	Adjustment
	33	Used to execute the gamma correction between printer screens. (for GDI)	Printer	Adjustment

3. Details of simulation

1

1-1

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the scanner unit and its control circuit.

Section : Optical (Image scanning)

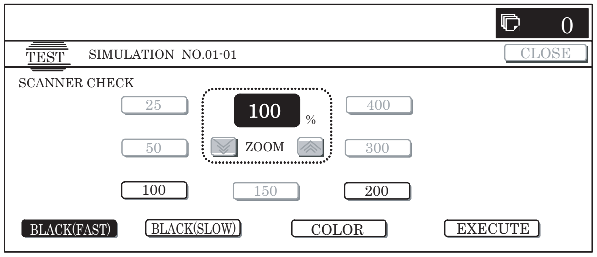
Item : Operation

Operation/Procedure

1) Select the operation mode with the buttons on the touch panel.
2) Select the magnification ratio with [ZOOM] button on the touch panel.
3) Press [EXECUTE] button.

   The scanner scans at the speed corresponding to the operation mode.

Button display	Content	Selectable magnification ratios	Default value
50	Scan magnification ratio: 50%	COLOR: 50%, 100%, 200% BLACK (High speed): 100%, 200% BLACK (Low speed): 50%, 100%, 200%	100%
100	Scan magnification ratio: 100%		
200	Scan magnification ratio: 200%		


0
TEST
SIMULATION NO.01-01
CLOSE
SCANNER CHECK
25
100
%
400
50
ZOOM
300
100
150
200
BLACK(FAST)
BLACK(SLOW)
COLOR
EXECUTE

1-2

Purpose : Operation test/check

Function (Purpose) : Used to check the operation of sensor and detector in the scanning (read) section and the related circuit.

Section : Optical (Image scanning)

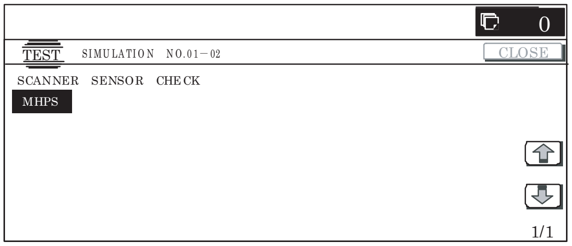
Item : Operation

Operation/Procedure

The sensor and detector operation conditions are displayed.

The active sensors and detectors are highlighted.

- The scanner (read) unit is in the home position.: "MHPS" section is highlighted.
- The scanner (read) unit is not in the home position.: "MHPS" is normally displayed.


0
TEST
SIMULATION NO.01−02
CLOSE
SCANNER SENSOR CHECK
MHPS
1/1

1-5

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the scanner unit.

Section : Optical (Image scanning)

Item : Operation

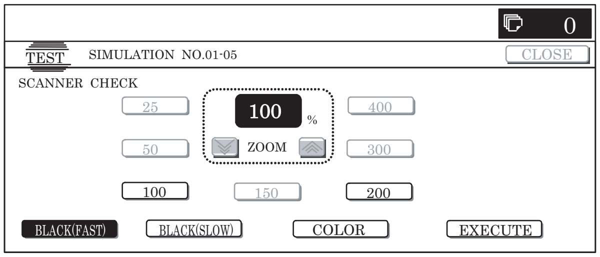
Operation/Procedure

1) Select the operation mode with the buttons on the touch panel.
2) Select the magnification ratio with [ZOOM] button on the touch panel.
3) Press [EXECUTE] button.

   The scanner scans continuously at the speed corresponding to the operation mode.

   When [EXECUTE] button is pressed, the operation is terminated.

Button display	Content	Selectable magnification ratio	Default value
50	Scan magnification ratio: 50%	COLOR: 50%, 100%, 200% BLACK (High speed): 100%, 200% BLACK (Low speed): 50%, 100%, 200%	100%
100	Scan magnification ratio: 100%		
200	Scan magnification ratio: 200%		


0
TEST
SIMULATION NO.01-05
CLOSE
SCANNER CHECK
25
100
%
400
50
ZOOM
300
100
150
200
BLACK(FAST)
BLACK(SLOW)
COLOR
EXECUTE

2

2-1

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the automatic document feeder unit and the control circuit.

Section : RSPF

Item : Operation

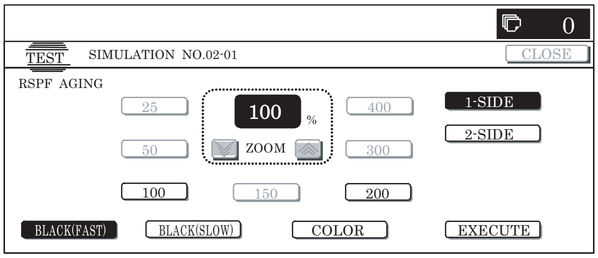
Operation/Procedure

1) Select the operation mode with the buttons on the touch panel.
2) Select the aging mode with [1SIDE] and [2SIDE] buttons on the touch panel.
3) Select the magnification ratio with [ZOOM] button on the touch panel.
4) Press [EXECUTE] button.

   Aging is performed in the mode corresponding to the operation mode.

   * When [EXECUTE] button is pressed during aging, the operation is terminated and [EXECUTE] button returns to the original state.

Button display	Content	Selectable magnification ratio	Default value
50	Scan magnification ratio: 50%	COLOR: 50%, 100%, 200%	100%
100	Scan magnification ratio: 100%	BLACK (High speed): 100%, 200%	
200	Scan magnification ratio: 200%	BLACK (Low speed): 50%, 100%, 200%	



2-2

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the sensors and detectors in the automatic document feeder unit and the related circuits.

Section : RSPF

Item : Operation

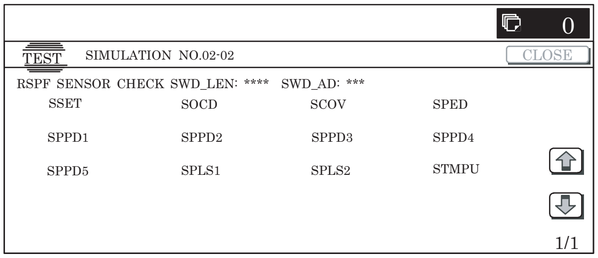
Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

SSET	SPF installation detection
SOCD	SPF open/close detection
SCOV	SPF cover SW
SPED	SPF document empty detection
SPPD1	SPF paper entry detection 1 and random detection (common)
SPPD2	SPF paper entry detection 2 PS front
SPPD3	SPF before-scan detection
SPPD4	SPF Reverse gate front detection
SPPD5	SPF Reverse rear detection
SPLS1	SPF Document length detection short
SPLS2	SPF Document length detection long
STMPU	SPF stamp unit installation detection
SWD_LEN	SPF guide plate position
SWD_AD	SPF document detection volume output

SWD_LEN and SWD_AD are not ON/OFF display.



2-3

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the loads in the automatic document feeder unit and the control circuits.

Section : RSPF

Item : Operation

Operation/Procedure

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.

   The selected load operation is performed.

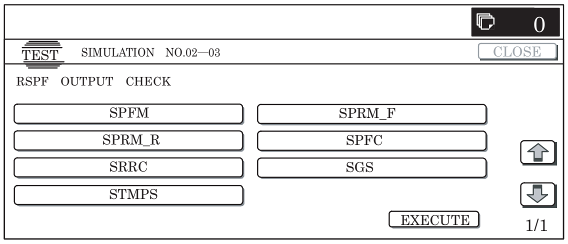
   When [EXECUTE] button is pressed, the operation is terminated.

SPFM	SPF transport motor
SPRM_F	SPF paper feed reverse motor normal rotation
SPRM_R	SPF paper feed reverse motor reverse rotation
SPFC	SPF paper feed clutch
SRRC	SPF resist roller clutch
SGS	SPF document exit gate solenoid
STMPS	Finish stamp solenoid (*1)

*1: Since the stamp solenoid is an option unit, it can be operated only when it is installed.

* For the same loads displayed separately depending on normal rotation and rotation, if they are selected together, normal rotation is performed.

In addition, if the load is rotating, reverse rotation is not accepted until the operation is stopped.



3

3-2

Purpose : Operation test/check

Function (Purpose) : Used to check the operation of sensor and detector in the finisher and the related circuit.

Section : Finisher

Item : Operation

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

<Saddle finisher>

FJPID	Interface transport unit entry port detection
FJPOD	Interface transport unit exit port detection
FJPDD	Interface transport unit cover detection
FED	Entry port paper detection
FPDHPD	Paddle HP detection
FARHPD	Bundle roller HP detection
FFJHPD	Alignment plate HP detection front
FRJHPD	Alignment plate HP detection rear
FAD	Alignment tray detection
FOBHPD	Discharge belt HP detection
FBED	Tray paper detection
FSLD	Paper surface detection
FFPD	Binding position detection
FFHPD	Binding HP detection
FFRHPD	Binding roller HP detection
FFED	Binding paper detection
FFE	Binding lock detection
FULD	Lift upper limit detection
FLLD	Lift lower limit detection

FLE	Lift lock detection
FSHPD	Staple drive HP detection
FSTHPD	Staple shift HP detection
FSD	Staple empty detection
FSUC	Staple connection detection
FSPD	Self prime detection
FMLD	Tray intermediate detection
FFDD	Front door detection
FCD	Upper cover detection
FFDSW	Front door SW detection
FJSW	Joint SW detection
FSSSW	Staple safety SW detection
FFANLK	Fan motor lock detection

<Saddle finisher punch unit>

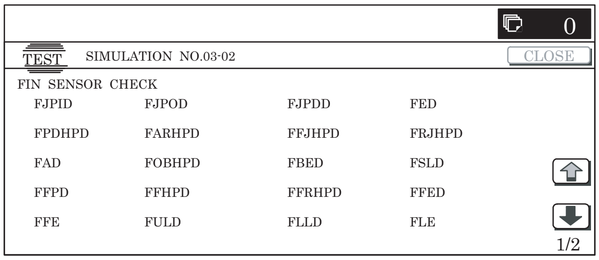
FPE	Punch motor lock detection
FPUC	Punch unit connection detection
FPHPD	Punch HP detection
FPDD	Punch dust detection
FPSHPD	Punch horizontal resist HP detection
FPTD	Punch timing detection
FPSD1	Punch horizontal resist detection 1
FPSD2	Punch horizontal resist detection 2
FPSD3	Punch horizontal resist detection 3
FPSD4	Punch horizontal resist detection 4

<Inner finisher>

FED	Entry port paper detection
FBED	Tray paper detection
FULD	Tray upper limit detection
FMLLD	Tray intermediate lower limit detection
FLLD	Tray lower limit detection
FSLD1	Paper surface detection 1
FSLD2	Paper surface detection 2
FRLD	Roller up/down detection
FBRD	Belt separation detection
FFJHPD	Alignment plate HP detection front
FRJHPD	Alignment plate HP detection rear
FJPD	Alignment guide position detection
FSTPD	Staple tray paper detection
FSHPD	Staple drive HP detection
FSTHPD	Staple shift HP detection
FSD	Staple empty detection
FSTD	Staple lead edge position detection
FDSW	Door open detection
FFANLK	Fan motor lock detection

<Inner finisher punch unit>

FPRPD	Punch rear position detection
FPUC	Punch unit connection detection
FPHPD	Punch HP detection
FPSHPD	Punch horizontal resist HP detection
FPDD	Punch dust detection
FPPEND	Punch paper rear edge detection
FPPD1	Punch paper surface detection 1
FPPD2	Punch paper surface detection 2
FPPD3	Punch paper surface detection 3
FPPD4	Punch paper surface detection 4
FPPD5	Punch paper surface detection 5
FPPD6	Punch paper surface detection 6
FPDES1	Punch destination detection 1
FPDES2	Punch destination detection 2



SIMULATION NO.03-02

FIN SENSOR CHECK

FJPID	FJPOD	FJPDD	FED
FPDHPD	FARHPD	FFJHPD	FRJHPD
FAD	FOBHPD	FBED	FSLD
FFPD	FFHPD	FFRHPD	FFED
FFE	FULD	FLLD	FLE

3-3

Purpose : Operation test/check

Function (Purpose) : Used to check the operation of the load in the finisher and the control circuit.

Section : Finisher

Item : Operation

Operation/Procedure

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.

The selected load operation is performed.

When [EXECUTE] button is pressed, the operation is terminated.

<When the saddle finisher is installed>

FINRPS	Entry port reverse solenoid
FJPM	Interface transport motor
FJFM	Interface transport fan motor
FFM	Transport motor
FPM	Paddle motor
FAM	Bundle paper exit motor
FFJM	Alignment motor front
FRJM	Alignment motor rear
FSM	Staple shift motor
FFSM	Staple motor
FLM	Lift motor
FFC	Folding clutch

<When the inner finisher is installed>

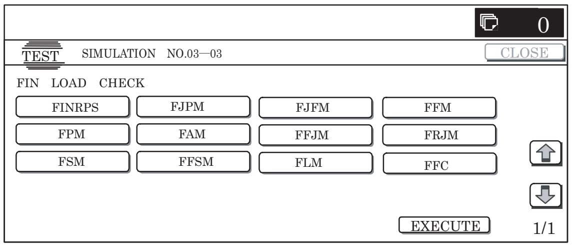
FINRPS	Entry port reverse path solenoid
FSLS	Paper surface detection solenoid
FPDS	Paddle solenoid
FBRS	Belt separation solenoid
FRM	Resist motor
FSWM	Oscillation motor
FAM	Bundle paper exit motor
FFJM	Alignment motor front
FRJM	Alignment motor rear
FSM	Staple shift motor
FFSM	Staple motor
FTLM	Tray lift motor
FFANM	Fan motor

<External punch unit>

FPNM	Punch motor
FPSM	Punch horizontal resist motor

<Inner punch unit>

FPNM	Punch motor
FPSM	Punch horizontal resist motor



3-10

Purpose : Adjustment

Function (Purpose) : Used to adjust the finisher.

Section : Finisher

Item : Operation

Operation/Procedure

1) Select the item according to the adjustment content with [↑] [↓] buttons.
2) Enter the adjustment value with 10-key.
3) Press [OK] button. (The set value is saved.)

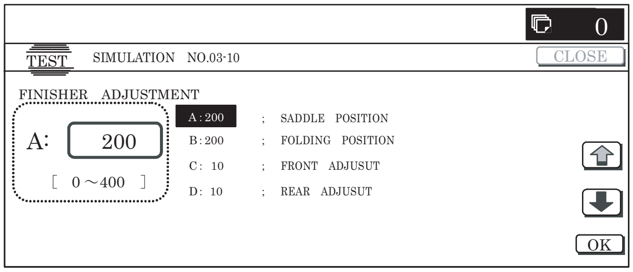
<Saddle finisher>

Item	Display	Item	Set range	Default value
A	SADDLE POSITOIN	Saddle binding position adjustment	0 to 400	200
B	FOLDING POSITION	Saddle folding position adjustment	0 to 400	200
C	FRONT ADJUST	Alignment position adjustment (front)	0 to 20	10
D	REAR ADJUST	Alignment position adjustment (rear)	0 to 20	10
E	STAPLE REAR	Staple binding position adjustment (one position at the rear)	0 to 200	100
F	STAPLE FRONT	Staple binding position adjustment (one position in front)	0 to 200	100
G	STAPLE BOTH	Staple binding position adjustment (two positions at the center)	0 to 200	100
H	STAPLE PITCH	Staple binding position adjustment (two positions in pitch)	0 to 100	50
I	PUNCH CENTER	Punch center adjustment	47 to 53	50
J	PUNCH HOLE	Punch hole position adjustment	0 to 100	50

<Inner finisher>

Item	Display	Item	Set range	Default value
A	FRONT ADJUST	Alignment position adjustment (front)	2 to 18	10
B	REAR ADJUST	Alignment position adjustment (rear)	2 to 18	10
C	STAPLE REAR	Staple binding position adjustment (one position at the rear)	68 to 132	100
D	STAPLE FRONT	Staple binding position adjustment (one position in front)	68 to 132	100
E	STAPLE BOTH	Staple binding position adjustment (two positions at the center)	68 to 132	100
F	STAPLE PITCH	Staple binding position adjustment (two positions in pitch)	68 to 132	100
G	PUNCH CENTER	Punch center adjustment	37 to 63	50
H	PUNCH HOLE	Punch hole position adjustment	42 to 58	50

[Screen (Saddle finisher installed)]



A: 200
[0～400]

A : 200 ; SADDLE POSITION
B : 200 ; FOLDING POSITION
C : 10 ; FRONT ADJUSUT
D : 10 ; REAR ADJUSUT

4

4-2

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the sensors and detectors in the desk/large capacity tray and the related circuit.

Section : Desk/Large capacity tray (LCC)

Item : Operation

Operation/Procedure

The active sensors and detectors are highlighted.

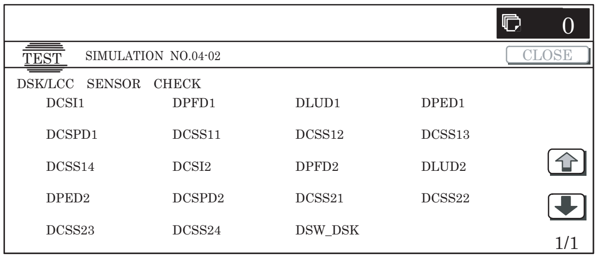
The active sensors and detectors are highlighted.

<Desk sensor>

DCSI1	Desk 1 installation detection
DPFD1	Desk 1 transport detection
DLUD1	Desk 1 upper limit detection
DPED1	Desk 1 paper empty detection
DCSPD1	Desk 1 remaining paper quantity detection
DCSS11	Desk 1 rear edge detection 1
DCSS12	Desk 1 rear edge detection 2
DCSS13	Desk 1 rear edge detection 3
DCSS14	Desk 1 rear edge detection 4
DCSI2	Desk 2 instillation detection
DPFD2	Desk 2 transport detection
DLUD2	Desk 2 upper limit detection
DPED2	Desk 2 paper empty detection
DCSPD2	Desk 2 remaining paper quantity detection
DCSS21	Desk 2 rear edge detection 1
DCSS22	Desk 2 rear edge detection 2
DCSS23	Desk 2 rear edge detection 3
DCSS24	Desk 2 rear edge detection 4
DSW_DSK	Desk transport cover open/close detection

<A4 LCC sensor>

LPFD	LCC transport sensor
LUD	LCC tray upper limit sensor
LDD	LCC tray lower limit sensor
LPED	LCC tray paper empty sensor
LCD	LCC tray insertion detection
LDSW	LCC upper open/close detection SW
LRE	LCC lift motor encoder sensor
L24VM	LCC24V power monitor
LLSW	LCC upper limit SW
LTOD	LCC main unit connection detection


0
TEST
CLOSE

SIMULATION NO.04-02

DSK/LCC SENSOR CHECK

DCSI1
DPFD1
DLUD1
DPED1
DCSPD1
DCSS11
DCSS12
DCSS13
DCSS14
DCSI2
DPFD2
DLUD2
DPED2
DCSPD2
DCSS21
DCSS22
DCSS23
DCSS24
DSW_DSK
1/1

4-3

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the loads in the large capacity tray and the related circuit.

Section : Desk/Large capacity tray (LCC)

Item : Operation

Operation/Procedure

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.

   The selected load operation is performed.

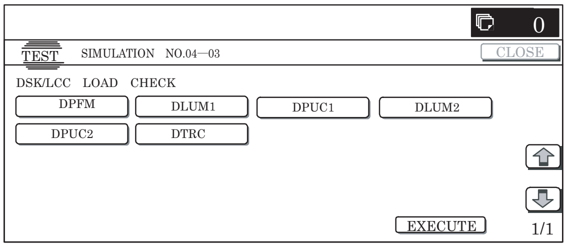
   When [EXECUTE] button is pressed, the operation is terminated.

<Desk load item>

DPFM	Desk main motor
DLUM1	Desk 1 lift-up motor
DPUC1	Desk 1 paper feed clutch
DLUM2	Desk 2 lift-up motor
DPUC2	Desk 2 paper feed clutch
DTRC	Desk transport clutch

<A4 LCC load item>

LPFM	LCC transport motor
LLM	LCC lift motor
LPFC	LCC paper feed clutch
LPFS	LCC paper feed solenoid
LTRC	LCC transport clutch


0
TEST
CLOSE

SIMULATION NO.04−03

DSK/LCC LOAD CHECK

DPFM
DLUM1
DPUC1
DLUM2
DPUC2
DTRC
EXECUTE
1/1

4-5

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the clutches and the related circuits.

Section : Desk/Large capacity tray (LCC)

Item : Operation

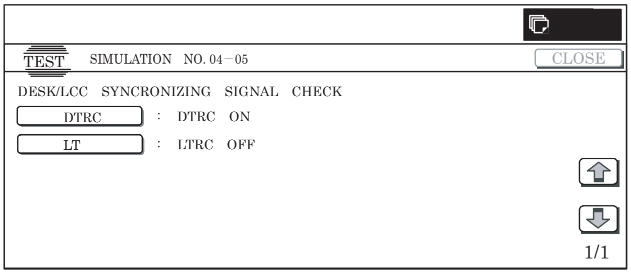
Operation/Procedure

Select the item to be checked with the buttons on the touch panel.

The selected clutch operation is performed.

When the operation is normally completed, the button is highlighted.

DTRC	Desk transport clutch
LTRC	A4 LCC transport clutch


TEST
CLOSE

SIMULATION NO. 04−05

DESK/LCC SYNCRONIZING SIGNAL CHECK

DTRC : DTRC ON

LT : LTRC OFF

1/1

5

5-1

Purpose : Operation test/check

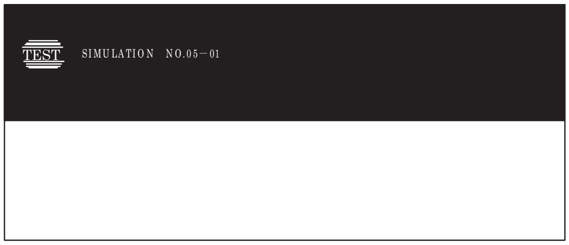
Function (Purpose) : Used to check the operation of the display, LCD in the operation panel, and control circuit.

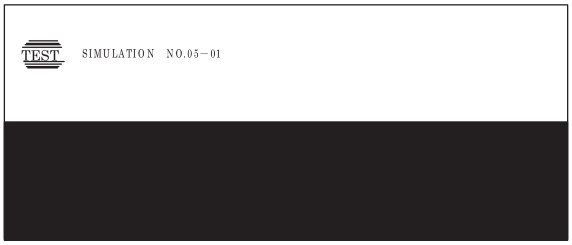
Section : Operation panel

Item : Operation

Operation/Procedure

The LCD is changed as shown below. (The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.


TEST
SIMULATION NO.05−01


TEST
SIMULATION NO.05−01

5-2

Purpose : Operation test/check

Function (Purpose) : Used to check the operation of the heater lamp and the control circuit.

Section : Fusing

Item : Operation

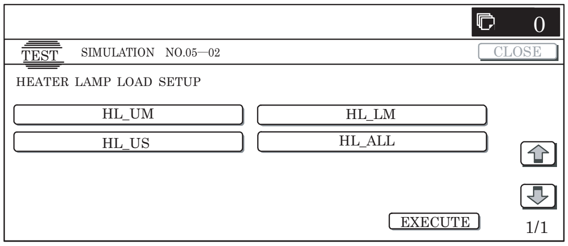
Operation/Procedure

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.

   The selected heater lamp is operated.

   When [EXECUTE] button is pressed, the operation is terminated.

HL_UM	Heater lamp upper main
HL_LM	Heater lamp lower main
HL_US	Heater lamp upper sub
HL_ALL	All heater lamps ON


0
TEST
SIMULATION NO.05—02
CLOSE
HEATER LAMP LOAD SETUP
HL_UM
HL_LM
HL_US
HL_ALL
EXECUTE
1/1

5-3

Purpose : Operation test/check

Function (Purpose) : Used to check the operation of the scanner lamp and the circuit.

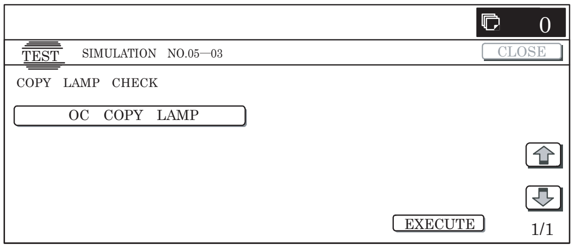
Section : Optical (Image scanning)

Item : Operation

Operation/Procedure

1) Press [OC COPY LAMP] button on the touch panel.
2) Press [EXECUTE] button.

   The target lamp is lighted for 10 sec.


0
TEST
SIMULATION NO.05—03
CLOSE
COPY LAMP CHECK
OC COPY LAMP
EXECUTE
1/1

5-4

Purpose : Operation test/check

Function (Purpose) : Used to check the operation of the discharge lamp and the related circuit.

Section : Process

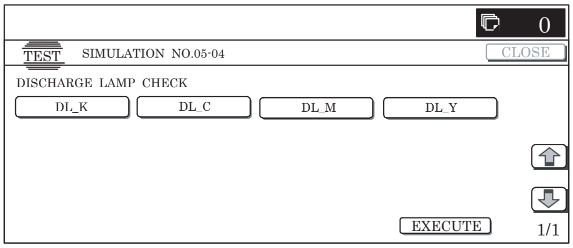
Item : Operation

Operation/Procedure

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.

   The selected discharge lamp is lighted.

DL_K	Discharge lamp K	
DL_C	Discharge lamp C	Same control
DL_M	Discharge lamp M	
DL_Y	Discharge lamp Y	


0
TEST
SIMULATION NO.05-04
CLOSE
DISCHARGE LAMP CHECK
DL_K
DL_C
DL_M
DL_Y
EXECUTE
1/1

6

6-1

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the paper transport system, the transfer system, the fusing system (clutches and solenoids) and the control circuits.

Section : Paper transport section (Transport, paper exit)

Item : Operation

Operation/Procedure

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.

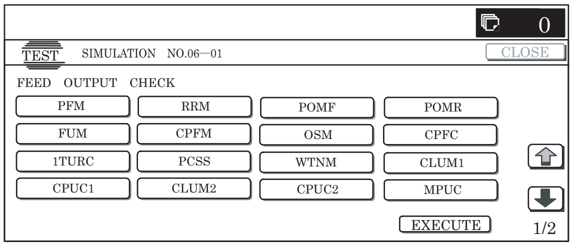
   The selected load operation is performed.

   When [EXECUTE] button is pressed, the operation is terminated.

Transport/ imaging	PFM	Transport motor
	RRM	Resist motor
	POMF (*)	Paper exit motor normal rotation
	POMR (*)	Paper exit motor reverse rotation
	FUM	Fusing motor
	CPFM	Cassette paper feed motor
	OSM	Shifter motor
	WTNM	Waste toner drive motor
	CPFC	Cassette vertical transport clutch
	1TURC	Primary transfer separation clutch
	PCSS	Process control shutter solenoid
	LSUSS1	LSU shutter solenoid 1
	LSUSS2	LSU shutter solenoid 2
Paper feed	CLUM1	Cassette 1 lift-up motor
	CPUC1	Cassette 1 paper feed clutch
	CLUM2	Cassette 2 lift-up motor
	CPUC2	Cassette 2 paper feed clutch
	MPUC	Manual paper feed clutch
	MPFS	Manual feed take-up solenoid
	MPGS	Manual feed gate solenoid

(*): For the same loads displayed separately depending on normal rotation and rotation, if they are selected together, normal rotation is performed.

In addition, if the load is rotating, reverse rotation is not accepted until the operation is stopped.


0
TEST
SIMULATION NO.06—01
CLOSE
FEED OUTPUT CHECK
PFM
RRM
POMF
POMR
FUM
CPFM
OSM
CPFC
1TURC
PCSS
WTNM
CLUM1
CPUC1
CLUM2
CPUC2
MPUC
EXECUTE
1/2

6-2

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of each fan motor and its control circuit.

Section : Other

Item : Operation

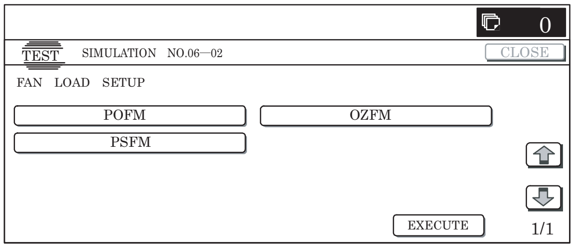
Operation/Procedure

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.

   The selected load operation is performed.

   When [EXECUTE] button is pressed, the operation is terminated.

POFM	Paper exit cooling fan motor (* POFM_U, POFM_F, and POFM_R are driven at the same time.)
OZFM	Ozone fan motor
PSFM	Power cooling fan motor


0
TEST
SIMULATION NO.06—02
CLOSE
FAN LOAD SETUP
POFM
OZFM
PSFM
EXECUTE
1/1

6-3

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the primary transfer unit and the related circuit.

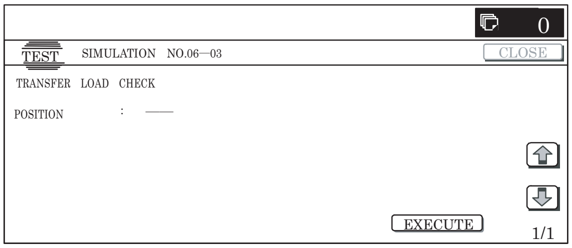
Section : Process (Transfer)

Item : Operation

Operation/Procedure

1) Press [EXECUTE] button.
2) The load operation is started. (Separation operation: BLACK → COLOR → FREE Stops at each position for 5 sec.) During the operation, the current position is displayed.

BLACK	Black mode position	Black mode position → COLOR mode position → Drum separation position → Shift to the black mode position is repeated.
COLOR	COLOR mode position	
FREE	Drum separation position	


0
TEST
SIMULATION NO.06—03
CLOSE
TRANSFER LOAD CHECK
POSITION : ——
EXECUTE
1/1

7

7-1

Purpose : Setting

Function (Purpose) : Used to set the operating conditions of aging.

Section : Other

Item : Operation

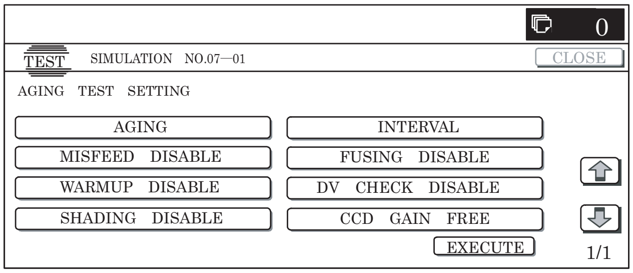
Operation/Procedure

1) Select the target to be set with buttons on the touch panel.
2) Press [EXECUTE] button.

   The machine is rebooted in the aging mode.

   The contents set with this simulation are retained until the power is turned OFF.

AGING	Aging operation setup
INTERVAL	Intermittent setup
MISFEED DISABLE	JAM detection enable/disable setup
FUSING DISABLE	Fusing operation enable/disable setup
WARMUP DISABLE	Warm-up disable setup
DV CHECK DISABLE	DV unit detection enable/disable setup
SHADING DISABLE	Shading disable setup
CCD GAIN FREE	CCD gain adjustment free setup


0
TEST
SIMULATION NO.07—01
CLOSE
AGING TEST SETTING
AGING
INTERVAL
MISFEED DISABLE
FUSING DISABLE
WARMUP DISABLE
DV CHECK DISABLE
SHADING DISABLE
CCD GAIN FREE
EXECUTE
1/1

7-6

Purpose : Setting

Function (Purpose) : Used to set the intermittent aging cycle.

Section : Other

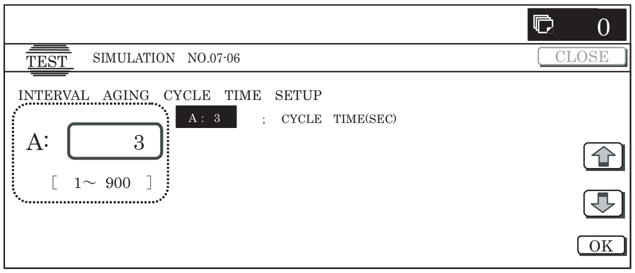
Item : Operation

Operation/Procedure

1) Enter the intermittent aging cycle (unit: sec) with 10-key.
2) Press [OK] button.

   The time entered in procedure 1) is set.

Item	Item	Set range	Default value
A	CYCLE TIME(SEC)	1 to 900	3


0
TEST
SIMULATION NO.07-06
CLOSE
INTERVAL AGING CYCLE TIME SETUP
A : 3
; CYCLE TIME(SEC)
A: 3
[1～ 900]
OK

7-8

Purpose : Operation display

Function (Purpose) : Used to display the warm-up time.

Section : Fusing

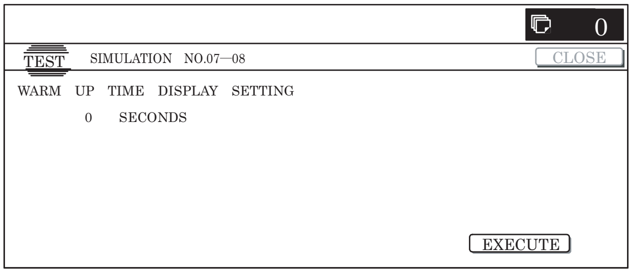
Item : Operation

Operation/Procedure

Press [EXECUTE] button.

Counting of the warm-up time is started.

* Interruption of counting by pressing [EXECUTE] button is inhibited.



SIMULATION NO.07−08

WARM UP TIME DISPLAY SETTING

0 SECONDS

7-9

Purpose : Operation test/check

Function (Purpose) : Used to check printing in the color mode.

Section : —

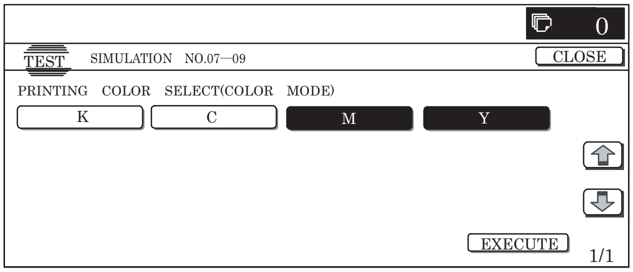
Item : Operation

Operation/Procedure

1) Select a print color with buttons on the touch panel.
2) Press [EXECUTE] button.
   Printing is started in the selected color.

* If no color is specified, printing is made in all colors.

K	Setup/cancel of black
C	Setup/cancel of cyan
M	Setup/cancel of magenta
Y	Setup/cancel of yellow



SIMULATION NO.07−09

PRINTING COLOR SELECT(COLOR MODE)

8

8-1

Purpose : Operation test/Check/Adjustment

Function (Purpose) : Used to check and adjust the operations of the developing voltage of each color and the control circuit.

Section : Process (Photoconductor/Developing/ Transfer/Cleaning)

Item : Operation

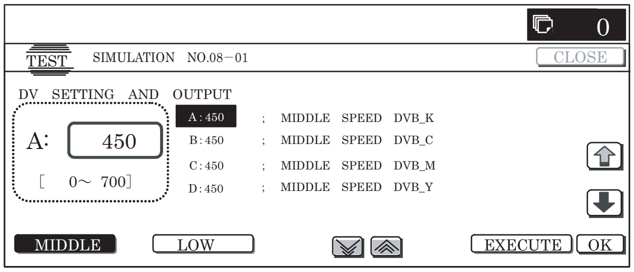
Operation/Procedure

1) Select a speed with [MIDDLE] and [LOW] buttons on the touch panel.
2) Select a target item to be adjusted with [↑] [↓] buttons.
3) Enter the adjustment value with 10-key.
4) Press [EXECUTE] button.
   The set value is saved and the voltage corresponding to the set value is outputted for 30 sec.

* The adjustment values of [MIDDLE] and [LOW] are related together.

* When [EXECUTE] button is pressed, the output is terminated.

Button	Item	Display	Content	Setting range	Default value
MIDDLE	A	MIDDLE SPEED DVB_K	K developing bias set value at middle speed	0 to 700	450
	B	MIDDLE SPEED DVB_C	C developing bias set value at middle speed	0 to 700	450
	C	MIDDLE SPEED DVB_M	M developing bias set value at middle speed	0 to 700	450
	D	MIDDLE SPEED DVB_Y	Y developing bias set value at middle speed	0 to 700	450
LOW	A	LOW SPEED DVB_K	K developing bias set value at low speed	0 to 700	430
	B	LOW SPEED DVB_C	C developing bias set value at low speed	0 to 700	430
	C	LOW SPEED DVB_M	M developing bias set value at low speed	0 to 700	430
	D	LOW SPEED DVB_Y	Y developing bias set value at low speed	0 to 700	430



SIMULATION NO.08−01

DV SETTING AND OUTPUT

A: 450

[0~ 700]

A : 450 ; MIDDLE SPEED DVB_K
B : 450 ; MIDDLE SPEED DVB_C
C : 450 ; MIDDLE SPEED DVB_M
D : 450 ; MIDDLE SPEED DVB_Y

8-2

Purpose : Operation test/Check/Adjustment

Function (Purpose) : Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit.

Section : Process (Photoconductor/Developing/ Transfer/Cleaning)

Item : Operation

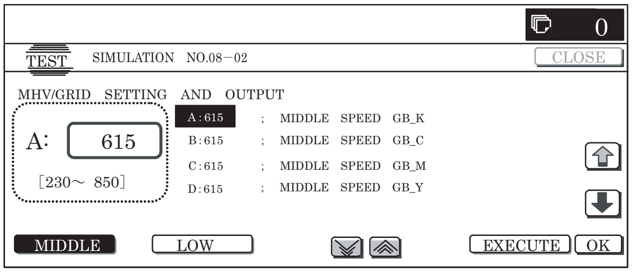
Operation/Procedure

1) Select a speed with [MIDDLE] and [LOW] buttons on the touch panel.
2) Select a target item to be adjusted with [↑] [↓] buttons.
3) Enter the adjustment value with 10-key.
4) Press [EXECUTE] button.
   The set value is saved and the voltage corresponding to the set value is outputted for 30 sec.

* The adjustment values of [MIDDLE] and [LOW] are related together.

* When [EXECUTE] button is pressed, the output is terminated.

Button	Item	Display	Content	Setting range	Default value
MIDDLE	A	MIDDLE SPEED GB_K	K charging/grid bias set value at middle speed	230 to 850	615
	B	MIDDLE SPEED GB_C	C charging/grid bias set value at middle speed	230 to 850	615
	C	MIDDLE SPEED GB_M	M charging/grid bias set value at middle speed	230 to 850	615
	D	MIDDLE SPEED GB_Y	Y charging/grid bias set value at middle speed	230 to 850	615
LOW	A	LOW SPEED GB_K	K charging/grid bias set value at low speed	230 to 850	605
	B	LOW SPEED GB_C	C charging/grid bias set value at low speed	230 to 850	605
	C	LOW SPEED GB_M	M charging/grid bias set value at low speed	230 to 850	605
	D	LOW SPEED GB_Y	Y charging/grid bias set value at low speed	230 to 850	605


TEST SIMULATION NO.08−02

MHV/GRID SETTING AND OUTPUT

A: 615

[230～ 850]

A : 615 ; MIDDLE SPEED GB_K
B : 615 ; MIDDLE SPEED GB_C
C : 615 ; MIDDLE SPEED GB_M
D : 615 ; MIDDLE SPEED GB_Y

8-6

Purpose : Operation test/Check/Adjustment

Function (Purpose) : Used to check and adjust the operation of the transfer voltage and the control circuit.

Section : Process (Photoconductor/Developing/Transfer/Cleaning)/Transfer

Item : Setting

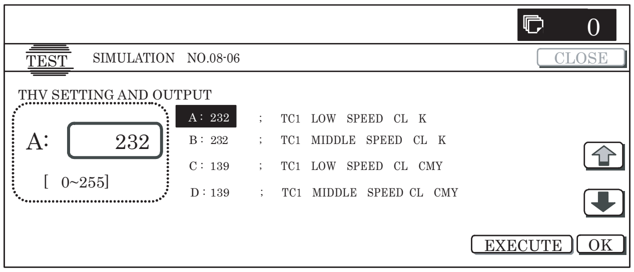
Operation/Procedure

1) Select a target item to be adjusted with [↑] [↓] buttons.
2) Enter the adjustment value with 10-key.
3) Press [EXECUTE] button.

   The set value is saved and the voltage corresponding to the set value is outputted for 30 sec.

   When [EXECUTE] button is pressed, the output is terminated.

Item	Display	Content				Setting range	Default value	Actual output setting range	Default value Actual output value
A	TC1 LOW SPEED CL K	Primary transfer bias reference value	COLOR	K	Low speed	0 to 255	232	–500V to 5000V	4500V
B	TC1 MIDDLE SPEED CL K				Middle speed	0 to 255	232	–500V to 5000V	4500V
C	TC1 LOW SPEED CL CMY			CMY	Low speed	0 to 255	139	–500V to 5000V	2500V
D	TC1 MIDDLE SPEED CL CMY				Middle speed	0 to 255	139	–500V to 5000V	2500V
E	TC1 LOW SPEED BW K		BLACK	K	Low speed	0 to 255	232	–500V to 5000V	4500V
F	TC1 MIDDLE SPEED BW K				Middle speed	0 to 255	232	–500V to 5000V	4500V
G	TC2 PLAIN CL SPX	Secondary transfer bias reference value	COLOR	Normal paper	Front surface	51 to 255	100	2µA to 45µA	12.5µA
H	TC2 PLAIN CL DPX				Back surface	51 to 255	100	2µA to 45µA	12.5µA
I	TC2 PLAIN BW SPX		BLACK		Front surface	51 to 255	90	2µA to 45µA	10µA
J	TC2 PLAIN BW DPX				Back surface	51 to 255	90	2µA to 45µA	10µA
K	TC2 HEAVY1 CL SPX		COLOR	Heavy paper		51 to 255	69	2µA to 45µA	6µA
L	TC2 HEAVY1 BW SPX		BLACK			51 to 255	69	2µA to 45µA	6µA
M	TC2 OHP CL		COLOR	OHP		51 to 255	60	2µA to 45µA	4µA
N	TC2 OHP BW		BLACK			51 to 255	60	2µA to 45µA	4µA
O	TC2 ENVELOPE CL		COLOR	Envelope		51 to 255	184	2µA to 45µA	30µA
P	TC2 ENVELOPE BW		BLACK			51 to 255	184	2µA to 45µA	30µA
Q	TC2 CLEANING		Cleaning process			51 to 255	79	2µA to 45µA	8µA
R	TC2 CLEAN LOW SPD	Secondary transfer cleaning bias reference value	Low speed print			51 to 255	72	–50V to –1500	–200V
S	TC2 CLEAN MIDDLE SPD		Middle speed print			51 to 255	72	–50V to –1500V	–200V
T	TC2 CLEAN CLEANING		Cleaning			51 to 255	156	–50V to –1500V	–800V


TEST SIMULATION NO.08-06

THV SETTING AND OUTPUT

A: 232

[0~255]

A : 232 ; TC1 LOW SPEED CL K
B : 232 ; TC1 MIDDLE SPEED CL K
C : 139 ; TC1 LOW SPEED CL CMY
D : 139 ; TC1 MIDDLE SPEED CL CMY

9

9-2

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the sensors and detectors in the duplex section and its control circuit.

Section : Duplex

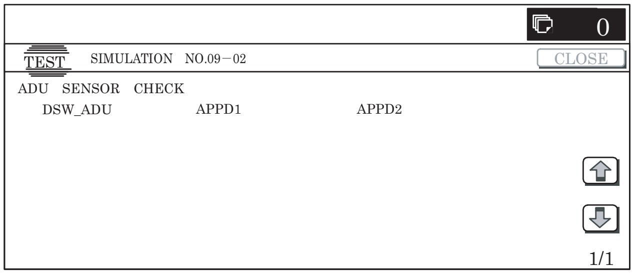
Item : Operation

Operation/Procedure

The sensor and detector operation conditions are displayed.

The active sensors and detectors are highlighted.

DSW_ADU	ADU transport open/close detection
APPD1	ADU transport path detection 1
APPD2	ADU transport path detection 2


0
TEST
SIMULATION NO.09－02
CLOSE
ADU SENSOR CHECK
DSW_ADU
APPD1
APPD2
1/1

9-3

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the loads in the duplex section and the control circuits.

Section : Duplex

Item : Operation

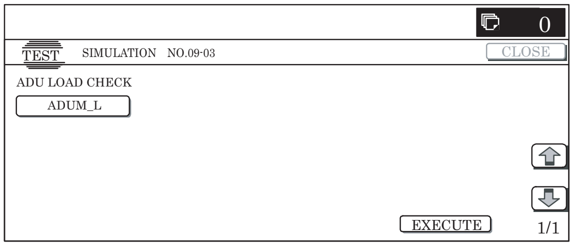
Operation/Procedure

1) Select the item to be operation tested with the buttons on the touch panel.
2) Press [EXECUTE] button.

   The selected load operation is performed.

   When [EXECUTE] button is pressed, the output is terminated.

ADUM_L	ADU motor lower


0
TEST
SIMULATION NO.09-03
CLOSE
ADU LOAD CHECK
ADUM_L
EXECUTE
1/1

10

10-1

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the toner motor and the related circuit.

Section : Process (Developing)

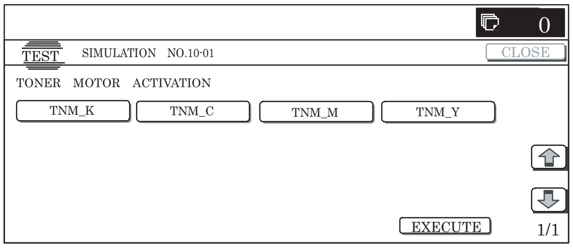
Item : Operation

Operation/Procedure

* Before execution of this simulation, remove the toner cartridges.

1) Select the item to be checked with the buttons on the touch panel.
2) Press [EXECUTE] button.
   * The selected load operation is performed for 10 sec.
   * When [EXECUTE] button is pressed, the operation is terminated.

TNM_K	Toner motor K
TNM_C	Toner motor C
TNM_M	Toner motor M
TNM_Y	Toner motor Y


0
TEST
SIMULATION NO.10-01
CLOSE
TONER MOTOR ACTIVATION
TNM_K
TNM_C
TNM_M
TNM_Y
EXECUTE
1/1

13

13--

Purpose : Clear/cancel (Trouble etc.)

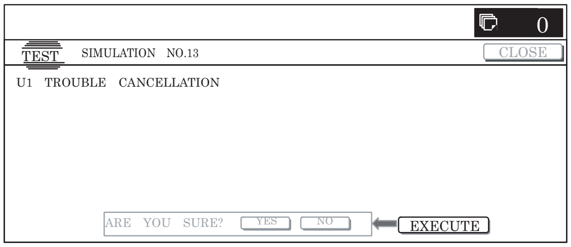
Function (Purpose) : Used to cancel the self-diag "U1" trouble.

Section : FAX

Item : Trouble

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button to execute cancellation of the trouble.


0
TEST
SIMULATION NO.13
CLOSE
U1 TROUBLE CANCELLATION
ARE YOU SURE?
YES
NO
EXECUTE

14

14--

Purpose : Clear/cancel (Trouble etc.)

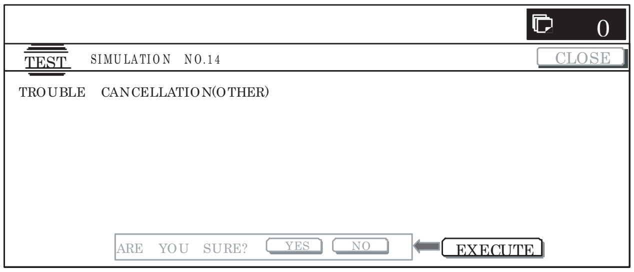
Function (Purpose) : Used to cancel excluding the self-diag U1/LCC/U2/PF troubles.

Section : —

Item : Trouble

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button to execute cancellation of the trouble.



SIMULATION NO.14

TROUBLE CANCELLATION(OTHER)

15

15--

Purpose : Clear/cancel (Trouble etc.)

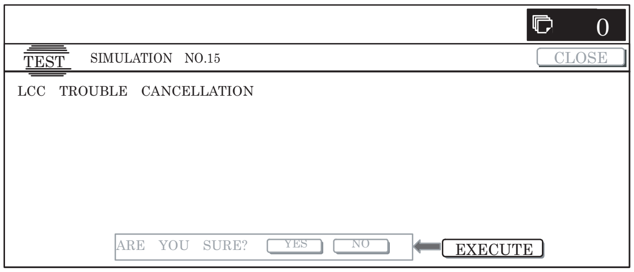
Function (Purpose) : Used to cancel the self-diag "U6-09" (large capacity paper feed tray) trouble.

Section : LCC

Item : Trouble

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button to execute cancellation of the trouble.



SIMULATION NO.15

LCC TROUBLE CANCELLATION

16

16--

Purpose : Clear/cancel (Trouble etc.)

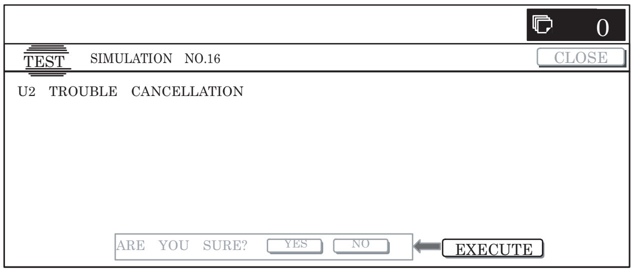
Function (Purpose) : Used to cancel the self-diag U2 trouble.

Section : MFPcnt PWB / PCU PWB / SCU PWB

Item : Trouble

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button to execute cancellation of the trouble.



SIMULATION NO.16

U2 TROUBLE CANCELLATION

17

17--

Purpose : Clear/cancel (Trouble etc.)

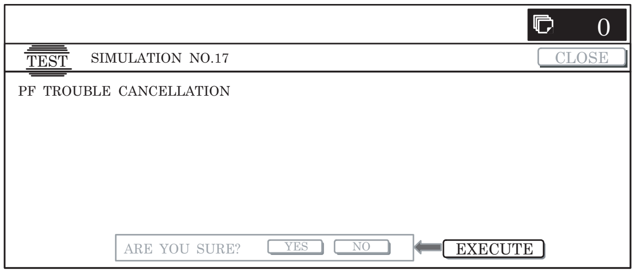
Function (Purpose) : Used to cancel the self-diag PF.

Section : Communication unit (RIC/MODEM)

Item : Trouble

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button to execute cancellation of the trouble.



SIMULATION NO.17

PF TROUBLE CANCELLATION

21

21-1

Purpose : Setting

Function (Purpose) : Used to set the maintenance cycle.

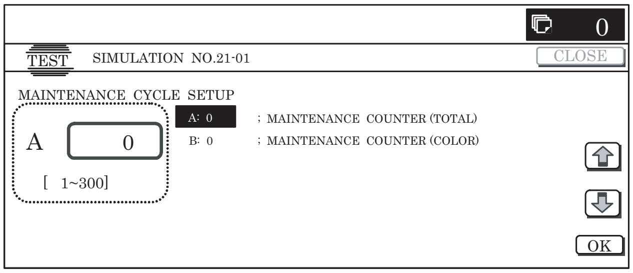
Section : —

Item : Specifications

Operation/Procedure

1) Select an item corresponding to the set contents with [↑] [↓] buttons.
2) Enter the value corresponding to the maintenance timing with 10-key.
3) Press [OK] button to save the entered conditions in step 2).

Item	Display	Content	Set range	Default value
A	MAINTENANCE COUNTER (TOTAL)	Maintenance counter (total)	0: DEFAULT, 1 – 300: 1K – 300K 999: FREE	100K
B	MAINTENANCE COUNTER (COLOR)	Maintenance counter (color)	0: DEFAULT, 1 – 300: 1K – 300K 999: FREE	60K



SIMULATION NO.21-01

MAINTENANCE CYCLE SETUP

A 0

[1~300]

A: 0 ; MAINTENANCE COUNTER (TOTAL)

B: 0 ; MAINTENANCE COUNTER (COLOR)

22

22-1

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.)

Section : —

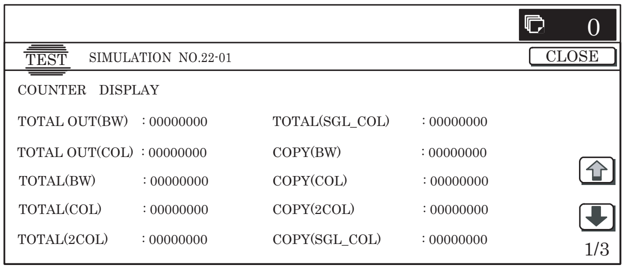
Item : Counter

Operation/Procedure

Change the display page with [↑] [↓] buttons.

Press [COLOR] or [BLACK] button to print.

TOTAL OUT(BW)	Total output quantity of black
TOTAL OUT(COL)	Total output quantity of color
TOTAL(BW)	Total use quantity of black
TOTAL(COL)	Total use quantity of color
TOTAL(2COL)	Total use quantity of 2-color
TOTAL(SGL_COL)	Total use quantity of single color
COPY(BW)	Black copy counter
COPY(COL)	Color copy counter
COPY(2COL)	2-color copy counter
COPY(SGL_COL)	Single color copy counter
PRINT(BW)	Black print counter
PRINT(COL)	Color print counter
DOC FIL(BW)	Black document filing print counter
DOC FIL(COL)	Color document filing print counter
DOC FIL(2COL)	2-color document filing print counter
DOC FIL(SGL COL)	Single-color document filing print counter
OTHER(BW)	Black other counter
OTHER(COL)	Color other counter
MAINTENANCE ALL	Maintenance counter (Total)
MAINTENANCE COL	Maintenance counter (Color)
TC1 BELT	Primary transfer unit print counter
TC1 BELT RANGE	Primary transfer unit accumulated traveling distance (cm)
TC1 BELT DAY	Use day of primary transfer (Day)
TC2 BELT	Secondary transfer unit print counter
TC2 BELT RANGE	Secondary transfer unit accumulated traveling distance (cm)
TC2 BELT DAY	Use day of secondary transfer unit (Day)
FUSER UNIT	Fuser unit print counter
FUSER ACUM DAY	Use day of fuser unit (Day)
DRUM LIFE(K)	Accumulated number of drum rotations (K)
DRUM LIFE(C)	Accumulated number of drum rotations (C)
DRUM LIFE(M)	Accumulated number of drum rotations (M)
DRUM LIFE(Y)	Accumulated number of drum rotations (Y)
DEVE LIFE(K)	Accumulated number of developer rotations (K)
DEVE LIFE(C)	Accumulated number of developer rotations (C)
DEVE LIFE(M)	Accumulated number of developer rotations (M)
DEVE LIFE(Y)	Accumulated number of developer rotations (Y)



SIMULATION NO.22-01

COUNTER DISPLAY

TOTAL OUT(BW) : 00000000

TOTAL OUT(COL) : 00000000

TOTAL(BW) : 00000000

TOTAL(COL) : 00000000

TOTAL(2COL) : 00000000

TOTAL(SGL_COL) : 00000000

COPY(BW) : 00000000

COPY(COL) : 00000000

COPY(2COL) : 00000000

COPY(SGL_COL) : 00000000

22-2

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the total numbers of misfeed and troubles. (When the number of total jam is considerably great, it is judged as necessary for repair.)

Section : —

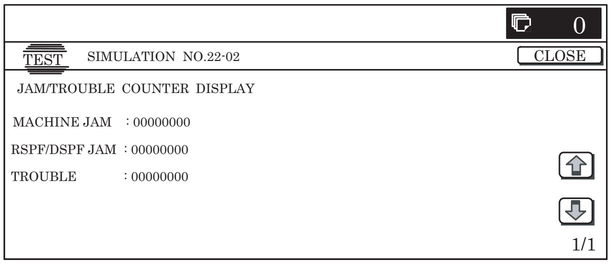
Item : Counter

Operation/Procedure

The paper jam/trouble counter value is displayed.

Press [COLOR] or [BLACK] button to print.

MACHINE JAM	Machine JAM counter
RSPF/DSPF JAM	SPF JAM counter
TROUBLE	Trouble counter



SIMULATION NO.22-02

JAM/TROUBLE COUNTER DISPLAY

MACHINE JAM : 00000000

RSPF/DSPF JAM : 00000000

TROUBLE : 00000000

22-3

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check misfeed positions and the misfeed count of each position.

Section : —

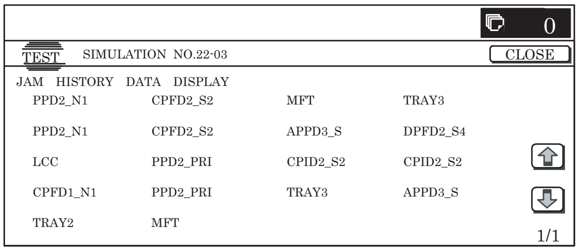
Item : Trouble

Operation/Procedure

The history of paper jams and misfeed is displayed.

The above histories are displayed from the newest one to the oldest in this sequence. The max. 50 items are saved. (The oldest one is sequentially erased.)

* List of JAM codes: Refer to "2. Paper JAM code" in the "[12] OTHERS."



SIMULATION NO.22-03

JAM HISTORY DATA DISPLAY

PPD2_N1 CPFD2_S2 MFT TRAY3

PPD2_N1 CPFD2_S2 APPD3_S DPFD2_S4

LCC PPD2_PRI CPID2_S2 CPID2_S2

CPFD1_N1 PPD2_PRI TRAY3 APPD3_S

TRAY2 MFT

22-4

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the trouble (self diag) history.

Section : —

Item : Trouble

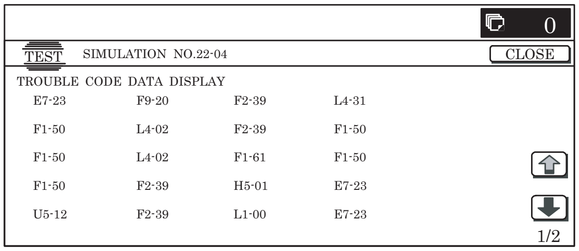
Operation/Procedure

The trouble history is displayed.

The trouble history is displayed sequentially from the latest one. The max. 30 items can be stored. (The oldest one is deleted sequentially.)

Press [COLOR] or [BLACK] button to print.

* Trouble code list: Refer to "2. Trouble code list" in the "[8] SELF DIAG AND TROUBLE CODE".



TROUBLE CODE DATA DISPLAY

E7-23	F9-20	F2-39	L4-31
F1-50	L4-02	F2-39	F1-50
F1-50	L4-02	F1-61	F1-50
F1-50	F2-39	H5-01	E7-23
U5-12	F2-39	L1-00	E7-23

22-5

Purpose : Others

Function (Purpose) : Used to check the ROM version of each unit (section).

Section : —

Item : Software

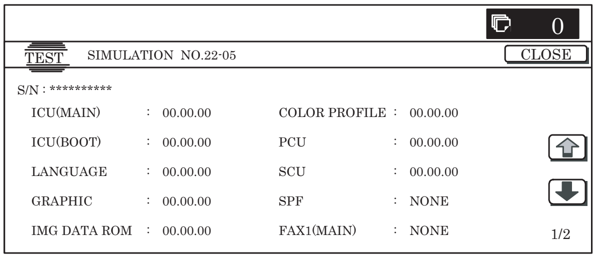
Operation/Procedure

The ROM version can be checked with [↑] [↓] buttons.

When there is any problem in the software, use this simulation to check the ROM version of each section and revise the version if necessary.

Press [COLOR] or [BLACK] button to print.

S/N	Serial No.
ICU(MAIN)	ICU (Main section)
ICU(BOOT)	ICU (Boot section)
LANGUAGE	Language support data version
GRAPHIC	Graphic data for LCD
IMG DATA ROM	ImageASIC FlashROM data
COLOR PROFILE	Color profile
PCU	PCU
SCU	SCU
SPF	SPF
FAX1(MAIN)	FAX1 line (Main section)
FAX2(MAIN)	FAX2 line (Main section)
DESK	Desk unit
LCC	Side LCC
FINISHER	Finisher
SADDLE	Saddle unit
PUNCH	Punch unit
NIC	NIC
POWER-CON	Power controller
E-MANUAL	Operation manual (HDD storage)



S/N : **********

ICU(MAIN) : 00.00.00
COLOR PROFILE : 00.00.00
ICU(BOOT) : 00.00.00
PCU : 00.00.00
LANGUAGE : 00.00.00
SCU : 00.00.00
GRAPHIC : 00.00.00
SPF : NONE
IMG DATA ROM : 00.00.00
FAX1(MAIN) : NONE

22-6

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to output the list of the setting and adjustment data (simulations, FAX soft switch, counters).

Section : —

Item : Data (Setting, adjustment data)

Operation/Procedure

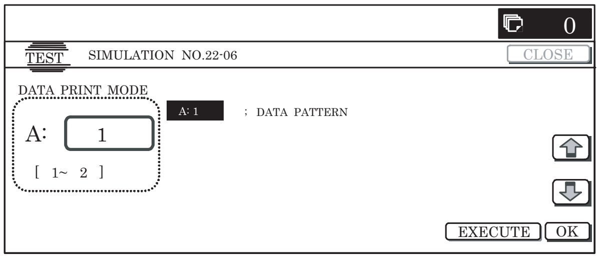
* When installing or servicing, this simulation is executed to print the adjustment data and set data for use in the next servicing. (Memory trouble, PWB replacement, etc.)

1) Select the print mode with 10-key.
2) Press [EXECUTE] button.

   The list print selected in step 1) is started.

   * When [C] key, [CA] key, [SYSTEM SETTINGS] key, or [EXECUTE] button is pressed during printing, the operation is terminated.

Item	Display item & detail display	Description	Set range	Default value
A	DATA PATTERN	Data pattern selection 1: List print 2: List print (Sim50-24)	1 to 2	1



DATA PRINT MODE

A: 1

[1~ 2]

A: 1 : DATA PATTERN

22-8

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the number of use of the finisher, the RSPF, and the scan (reading) unit.

Section : —

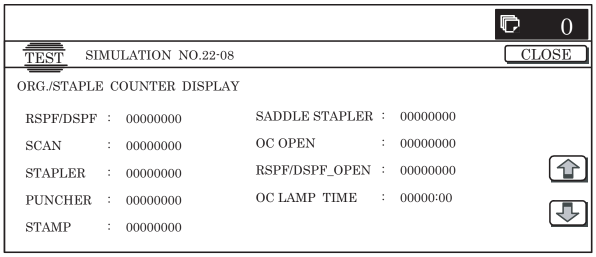
Item : Counter

Operation/Procedure

The values of the finisher counter, the RSPF counter, and the scanner (read) related counters are displayed.

Press [COLOR] or [BLACK] button to print.

RSPF/DSPF	Document feed quantity
SCAN	Number of scan
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
OC_OPEN	OC open/close counter
RSPF/DSPF_OPEN	RSPF/DSPF open/close counter
OC LAMP_TIME	Total lighting time of the lamp in OC section



SIMULATION NO.22-08

ORG./STAPLE COUNTER DISPLAY

RSPF/DSPF : 00000000
SCAN : 00000000
STAPLER : 00000000
PUNCHER : 00000000
STAMP : 00000000
SADDLE STAPLER : 00000000
OC OPEN : 00000000
RSPF/DSPF_OPEN : 00000000
OC LAMP TIME : 00000:00

22-9

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the number of use (print quantity) of each paper feed section.

Section : Paper feed, ADU, LCC

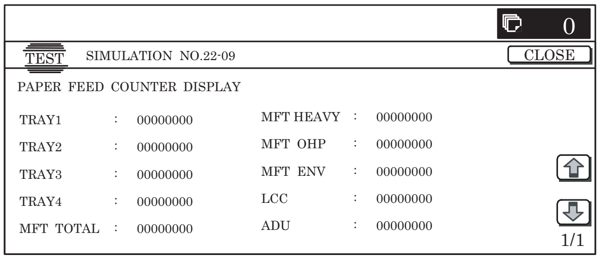
Item : Counter

Operation/Procedure

The values of the paper feed related counters are displayed.

Press [COLOR] or [BLACK] button to print.

TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT TOTAL	Manual paper feed counter (Total)
MFT HEAVY	Manual paper feed counter (Heavy paper)
MFT OHP	Manual paper feed counter (OHP)
MFT ENV	Manual paper feed counter (Envelope)
LCC	Side LCC paper feed counter (A4LCC)
ADU	ADU paper feed counter



SIMULATION NO.22-09

PAPER FEED COUNTER DISPLAY

TRAY1 : 00000000
TRAY2 : 00000000
TRAY3 : 00000000
TRAY4 : 00000000
MFT TOTAL : 00000000
MFT HEAVY : 00000000
MFT OHP : 00000000
MFT ENV : 00000000
LCC : 00000000
ADU : 00000000

22-10

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the system configuration (option, internal hardware).

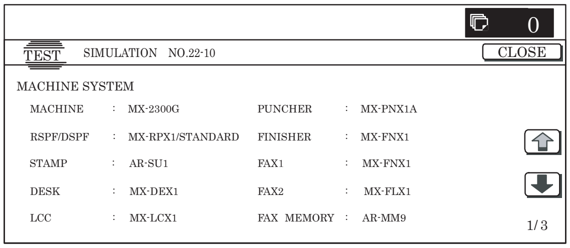
Section : —

Item : Specifications (Option)

Operation/Procedure

1) The system configuration is displayed. (The model names of the installed devices and options are displayed.)
2) Change the display with [↑] [↓] buttons.
   Press [COLOR] or [BLACK] button to print.

Item display	Display content	Content
MACHINE	MX-2300G	Machine
	MX-2300FG	
	MX-2700G	
	MX-2700FG	
	MX-2300N	
	MX-2700N	
RSPF/DSPF	MX-RPX1/ STANDARD	Document feed unit
STAMP	AR-SU1	Finisher stamp
DESK	MX-DEX1	Desk unit
	MX-DEX2	
LCC	MX-LCX1	Large capacity cassette (Side LCC)
PUNCHER	MX-PNX1A	Punch unit
	MX-PNX1B	
	AR-PN1A	
	AR-PN1B	
FINISHER	MX-FNX1	Finisher
	MX-FNX2	
FAX1	MX-FXX1	FAX kit
FAX2	MX-FLX1	FAX2 line kit
FAX MEMORY	AR-MM9	FAX expansion memory
	MX-MMX1	
HAND SET	MX-HNX1	Handset
NETWORK SCANNER	MX-NSX1	Network scanner expansion kit
PRINTER	MX-PBX1	Printer expansion kit
PS	MX-PKX1	PS expansion kit
SECURITY	MX-FRX1	Security kit
AIM	MX-AMX1	Application expansion kit
SDRAM(SYS)	*****MB	SDRAM capacity
SDRAM(ICU)	*****MB	SDRAM capacity
HDD	*****MB	Hard disk capacity
NIC	STANDARD	NIC
BARCODE	AR-PF1	Barcode font
INTERNET-FAX	MX-FWX1	Internet Fax expansion kit



SIMULATION NO.22-10

MACHINE SYSTEM

MACHINE : MX-2300G
RSPF/DSPF : MX-RPX1/STANDARD
STAMP : AR-SU1
DESK : MX-DEX1
LCC : MX-LCX1
PUNCHER : MX-PNX1A
FINISHER : MX-FNX1
FAX1 : MX-FNX1
FAX2 : MX-FLX1
FAX MEMORY : AR-MM9

22-11

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed)

Section : FAX

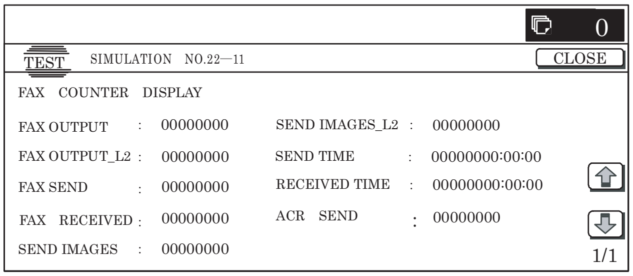
Item : Counter

Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

Press [COLOR] or [BLACK] button to print.

FAX OUTPUT	FAX print quantity counter (for line 1)
FAX OUTPUT_L2	FAX print quantity counter (for line 2)
FAX SEND	FAX send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND IMAGES_L2	FAX send quantity counter (for line 2)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time
ACR SEND	Number of carrier prefix adding communications



SIMULATION NO.22—11

FAX COUNTER DISPLAY

FAX OUTPUT : 00000000
FAX OUTPUT_L2 : 00000000
FAX SEND : 00000000
FAX RECEIVED : 00000000
SEND IMAGES : 00000000
SEND IMAGES_L2 : 00000000
SEND TIME : 00000000:00:00
RECEIVED TIME : 00000000:00:00
ACR SEND : 00000000

22-12

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the RSPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.)

Section : RSPF

Item : Function

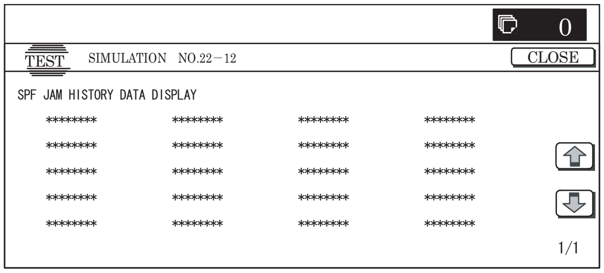
Operation/Procedure

The history of paper jam and misfeed is displayed.

The misfeed history is displayed sequentially from the latest one. The max. 50 items are recorded. (The oldest one is sequentially deleted.) This data can be used to identify the trouble position.

Press [COLOR] or [BLACK] button to print.

List of JAM codes: Refer to "2. Paper JAM code" in the "[12] OTHERS".



SPF JAM HISTORY DATA DISPLAY

```
********    ********    ********    ********
********    ********    ********    ********
********    ********    ********    ********
********    ********    ********    ********
********    ********    ********    ********
```

22-13

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the operating time of the process section (OPC drum, DV unit, toner cartridge).

Section : —

Item : Counter

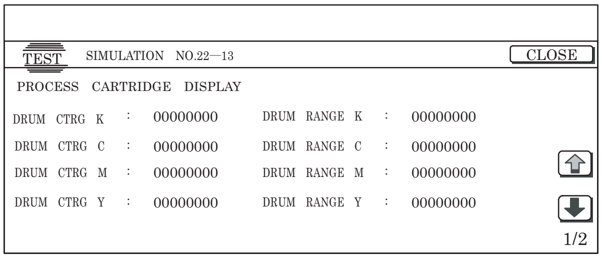
Operation/Procedure

The rotating time and the print quantity of the process section are displayed.

Change the display with [↑] [↓] buttons.

Press [COLOR] or [BLACK] button to print.

DRUM CTRG K	Drum cartridge print counter (K)
DRUM CTRG C	Drum cartridge print counter (C)
DRUM CTRG M	Drum cartridge print counter (M)
DRUM CTRG Y	Drum cartridge print counter (Y)
DRUM RANGE K	Drum cartridge accumulated traveling distance (CM)(K)
DRUM RANGE C	Drum cartridge accumulated traveling distance (CM)(C)
DRUM RANGE M	Drum cartridge accumulated traveling distance (CM)(M)
DRUM RANGE Y	Drum cartridge accumulated traveling distance (CM)(Y)
DEVE CTRG K	Developer cartridge print counter (K)
DEVE CTRG C	Developer cartridge print counter (C)
DEVE CTRG M	Developer cartridge print counter (M)
DEVE CTRG Y	Developer cartridge print counter (Y)
DEVE RANGE K	Developer cartridge accumulated traveling distance (CM)(K)
DEVE RANGE C	Developer cartridge accumulated traveling distance (CM)(C)
DEVE RANGE M	Developer cartridge accumulated traveling distance (CM)(M)
DEVE RANGE Y	Developer cartridge accumulated traveling distance (CM)(Y)
TONER MOTOR K	Toner motor print counter (K)
TONER MOTOR C	Toner motor print counter (C)
TONER MOTOR M	Toner motor print counter (M)
TONER MOTOR Y	Toner motor print counter (Y)
TONER TURN K	Toner motor accumulated rotation time (SEC)(K)
TONER TURN C	Toner motor accumulated rotation time (SEC)(C)
TONER TURN M	Toner motor accumulated rotation time (SEC)(M)
TONER TURN Y	Toner motor accumulated rotation time (SEC)(Y)



PROCESS CARTRIDGE DISPLAY

```
DRUM CTRG K  :  00000000     DRUM RANGE K  :  00000000
DRUM CTRG C  :  00000000     DRUM RANGE C  :  00000000
DRUM CTRG M  :  00000000     DRUM RANGE M  :  00000000
DRUM CTRG Y  :  00000000     DRUM RANGE Y  :  00000000
```

22-19

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to check the values of the counters related to the scan mode and the internet FAX mode.

Section : Scanner

Item : Counter

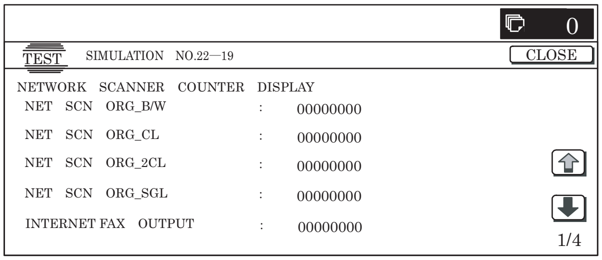
Operation/Procedure

Used to display the counter value related to the network scanner.

Change the display with [↑] [↓] buttons.

Press [COLOR] or [BLACK] button to print.

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W) (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (COLOR) (Color scan job)
NET SCN ORG_2CL	Network scanner document read quantity counter (2-COLOR) (2-Color scan job)
NET SCN ORG_SGL	Network scanner document read quantity counter (SINGLE) (Single-color scan job)
INTERNET FAX OUTPUT	Number of times of internet FAX output
INTERNET FAX SEND OUTPUT	Number of times of internet FAX send
INTERNET FAX RECEIVE	Number of times of internet FAX receive
INTERNET FAX SEND	Number of times of internet FAX send
MAIL COUNTER	Number of times of E-MAIL send
FTP COUNTER	Number of times of FTP send
SMB SEND	Number of times of SMB send
USB CNT	Number of times of USB storage
TRIAL MODE_B & C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	SCAN TO HDD record quantity (B/W)
SCAN TO HDD_CL	SCAN TO HDD record quantity (COLOR)
SCAN TO HDD_2CL	SCAN TO HDD record quantity (2-COLOR)
SCAN TO HDD_SGL	SCAN TO HDD record quantity (SINGLE color)



NETWORK SCANNER COUNTER DISPLAY

```
NET SCN ORG_B/W       :   00000000
NET SCN ORG_CL        :   00000000
NET SCN ORG_2CL       :   00000000
NET SCN ORG_SGL       :   00000000
INTERNET FAX OUTPUT   :   00000000
```

22-90

Purpose : Adjustment/Setup/Operation data check

Function (Purpose) : Used to output the various set data lists.

Section : —

Item : Function

Operation/Procedure

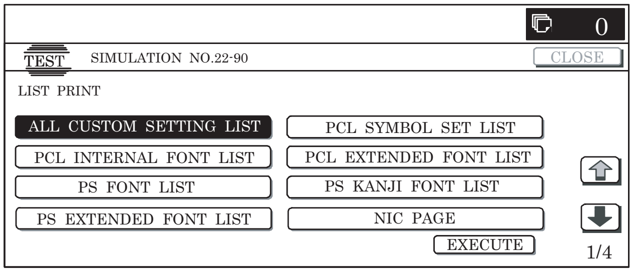
Change the display with [↑] [↓] buttons.

Select the print target with the buttons on the touch panel.

Press [EXECUTE] button to start self print.

* When [C] key, [CA] key, [SYSTEM SETTINGS] key, or [EXECUTE] button is pressed during printing, the operation is terminated.

All custom setting list	ALL CUSTOM SETTING LIST	All custom setting list
Printer test page	PCL SYMBOL SET LIST	PCL symbol set list
	PCL INTERNAL FONT LIST	PCL internal font list
	PCL EXTENDED FONT LIST	PCL extended font list
	PS FONT LIST	PS extended font list
	PS KANJI FONT LIST	PS kanji font list
	PS EXTENDED FONT LIST	PS extended font list
	NIC PAGE	NIC page
Address registration list	INDIVIDUAL LIST	One-touch address list
	GROUP LIST	Group list
	PROGRAM LIST	Program list
	MEMORY BOX LIST	Memory box list
	ALL SENDING ADDRESS LIST	All address registration list
Document filing folder list	DOCUMENT FILING FOLDER LIST	Folder list
System setting list	ADMIN. SETTINGS LIST (COPY)	Copy
	ADMIN. SETTINGS LIST (PRINT)	Printer
	ADMIN. SETTINGS LIST (IMAGE SEND)	FAX/Image send
	ADMIN. SETTINGS LIST (DOC FILING)	Document filing
	ADMIN. SETTINGS LIST (SECURITY)	Security
	ADMIN. SETTINGS LIST (COMMON)	Common
	ALL ADMINISTRATOR SETTINGS LIST	All system setting list
Receive rejection number table	ANTI JUNK FAX NUMBER LIST	Receive rejection number table
Receive rejection/ allow address/ domain table	ANTI JUNK MAIL/ DOMAIN NAME LIST	Receive rejection/allow address/domain table
Transfer to Email table list	INBOUND ROUTING LIST	Transfer to Email table list
Transfer to Administrator list	DOCUMENT ADMIN LIST	Transfer to Administrator list
Web setting list	WEB SETTING LIST	Web setting list
Meta data set list	METADATA SET LIST	Meta data set list



SIMULATION NO.22-90

LIST PRINT

23

23-2

Purpose : Adjustment/Setup/Operation data check

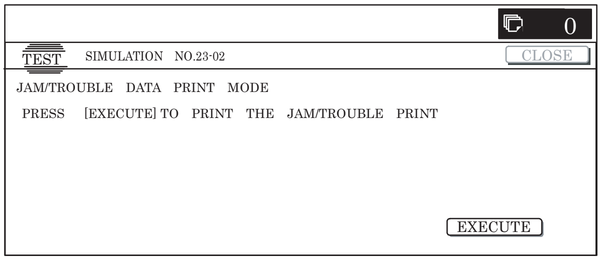
Function (Purpose) : Used to check the trouble history of paper jam and misfeed. (If the number of misfeed and troubles is considerably great, it may be judged as necessary to repair.)

Section : —

Item : Trouble

Operation/Procedure

Press [EXECUTE] button to execute print of the list.



SIMULATION NO.23-02

JAM/TROUBLE DATA PRINT MODE

PRESS [EXECUTE] TO PRINT THE JAM/TROUBLE PRINT

23-80

Purpose : Operation test/check

Function (Purpose) : Used to check the operations of the sensors and detectors in the paper feed and transport section.

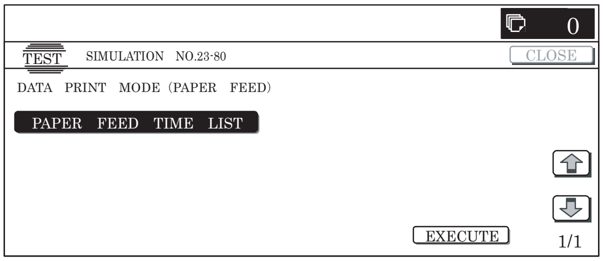
Section : Paper feed, transport

Item : Function

Operation/Procedure

Press [EXECUTE] button to execute print of the list.

* When [C] key, [CA] key, [SYSTEM SETTINGS] key, or [EXECUTE] button is pressed during printing, the operation is terminated.



SIMULATION NO.23-80

DATA PRINT MODE (PAPER FEED)

24

24-1

Purpose : Data clear

Function (Purpose) : Used to clear the jam counter, and the trouble counter. (The counters are cleared after completion of maintenance.)

Section : —

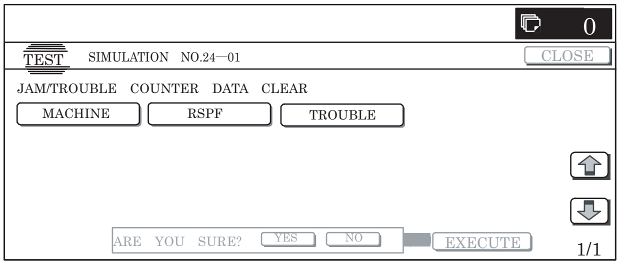
Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.

   The target counter is cleared.

MACHINE	Machine JAM counter
RSPF	RSPF JAM counter
TROUBLE	Trouble counter


0
TEST
SIMULATION NO.24—01
CLOSE
JAM/TROUBLE COUNTER DATA CLEAR
MACHINE
RSPF
TROUBLE
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-2

Purpose : Data clear

Function (Purpose) : Used to clear the number of use (the number of prints) of each paper feed section.

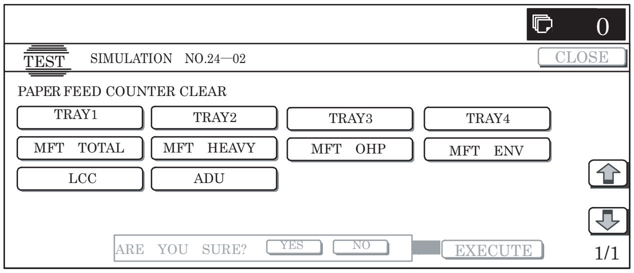
Section : —

Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.
   The target counter is cleared.

TRAY1	Tray 1 paper feed counter
TRAY2	Tray 2 paper feed counter
TRAY3	Tray 3 paper feed counter
TRAY4	Tray 4 paper feed counter
MFT TOTAL	Manual paper feed counter (Total)
MFT HEAVY	Manual paper feed counter (Heavy paper)
MFT OHP	Manual paper feed counter (OHP)
MFT ENV	Manual paper feed counter (Envelope)
LCC	Side LCC paper feed counter (A4LCC)
ADU	ADU paper feed counter


0
TEST
SIMULATION NO.24—02
CLOSE
PAPER FEED COUNTER CLEAR
TRAY1
TRAY2
TRAY3
TRAY4
MFT TOTAL
MFT HEAVY
MFT OHP
MFT ENV
LCC
ADU
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-3

Purpose : Data clear

Function (Purpose) : Used to clear the number of use of the finisher, RSPF, and the scan (reading) unit.

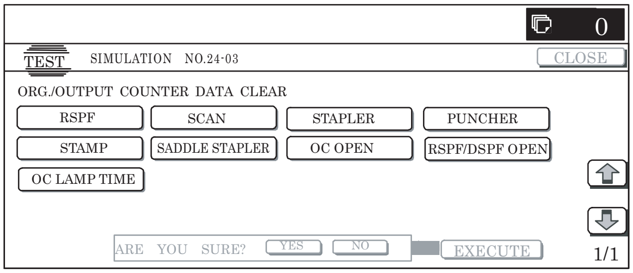
Section : —

Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.
   The target counter is cleared.

RSPF	SPF counter
SCAN	Scan counter
STAPLER	Staple counter
PUNCHER	Puncher counter
STAMP	Stamp counter
SADDLE STAPLER	Saddle staple counter
OC OPEN	OC open/close counter
RSPF OPEN	OPEN RSPF open/close counter
OC LAMP TIME	OC section lamp total lighting time


0
TEST
SIMULATION NO.24-03
CLOSE
ORG./OUTPUT COUNTER DATA CLEAR
RSPF
SCAN
STAPLER
PUNCHER
STAMP
SADDLE STAPLER
OC OPEN
RSPF/DSPF OPEN
OC LAMP TIME
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-4

Purpose : Data clear

Function (Purpose) : Used to clear the maintenance counter, the printer counters of the transfer unit and the fusing unit. (After completion of maintenance, clear the counters.)

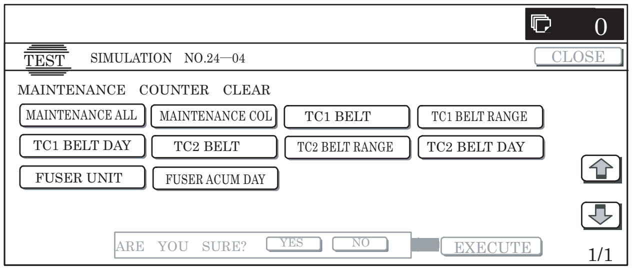
Section : —

Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.
   The target counter is cleared.

MAINTENANCE ALL	Maintenance counter (Total)
MAINTENANCE COL	Maintenance counter (Color)
TC1 BELT	Primary transfer unit print counter
TC1 BELT RANGE	Primary transfer unit accumulated traveling distance (cm)
TC1 BELT DAY	Primary transfer unit use day (Day)
TC2 BELT	Secondary transfer unit print counter
TC2 BELT RANGE	Secondary transfer unit accumulated traveling distance (cm)
TC2 BELT DAY	Secondary transfer unit use day (Day)
FUSER UNIT	Fusing unit print counter
FUSER ACUM DAY	Fusing unit use day (Day)


0
TEST
SIMULATION NO.24—04
CLOSE
MAINTENANCE COUNTER CLEAR
MAINTENANCE ALL
MAINTENANCE COL
TC1 BELT
TC1 BELT RANGE
TC1 BELT DAY
TC2 BELT
TC2 BELT RANGE
TC2 BELT DAY
FUSER UNIT
FUSER ACUM DAY
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-5

Purpose : Data clear

Function (Purpose) : Used to clear the developer counter. (After replacement of developer, clear the counter.)

Section : —

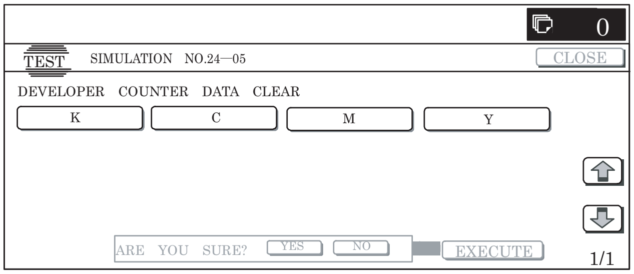
Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.

   The target counter is cleared.

K	Developer cartridge print counter (K)
	Developer cartridge accumulated traveling distance (cm) (K)
C	Developer cartridge print counter (C)
	Developer cartridge accumulated traveling distance (cm) (C)
M	Developer cartridge print counter (M)
	Developer cartridge accumulated traveling distance (cm) (M)
Y	Developer cartridge print counter (Y)
	Developer cartridge accumulated traveling distance (cm) (Y)


0
TEST
SIMULATION NO.24—05
CLOSE
DEVELOPER COUNTER DATA CLEAR
K
C
M
Y
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-6

Purpose : Data clear

Function (Purpose) : Used to clear the copy counter.

Section : —

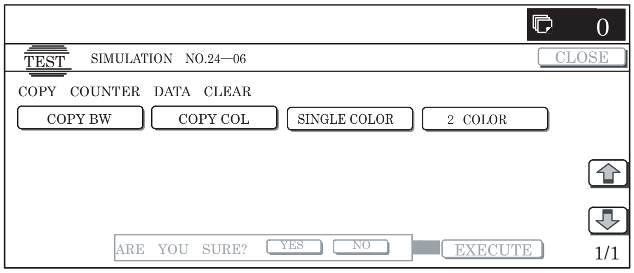
Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.

   The target counter is cleared.

COPY BW	Copy (B/W) counter
COPY COL	Copy (COLOR) counter
SINGLE COLOR	Single color
2COLOR	2-color


0
TEST
SIMULATION NO.24—06
CLOSE
COPY COUNTER DATA CLEAR
COPY BW
COPY COL
SINGLE COLOR
2 COLOR
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-7

Purpose : Data clear

Function (Purpose) : Used to clear the OPC drum counter. (After replacement of the OPC drum, clear the counter.)

Section : —

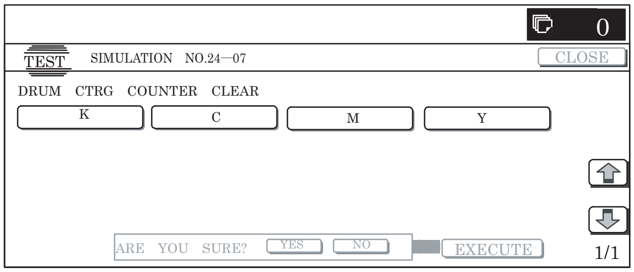
Item : Counter (OPC drum)

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.

   The target counter is cleared.

K	Drum cartridge print counter (K)
	Drum cartridge accumulated traveling distance (cm) (K)
C	Drum cartridge print counter (C)
	Drum cartridge accumulated traveling distance (cm) (C)
M	Drum cartridge print counter (M)
	Drum cartridge accumulated traveling distance (cm) (M)
Y	Drum cartridge print counter (Y)
	Drum cartridge accumulated traveling distance (cm) (Y)


0
TEST
SIMULATION NO.24—07
CLOSE
DRUM CTRG COUNTER CLEAR
K
C
M
Y
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-9

Purpose : Data clear

Function (Purpose) : Used clear the printer mode print counter and the self print mode print counter.

Section : —

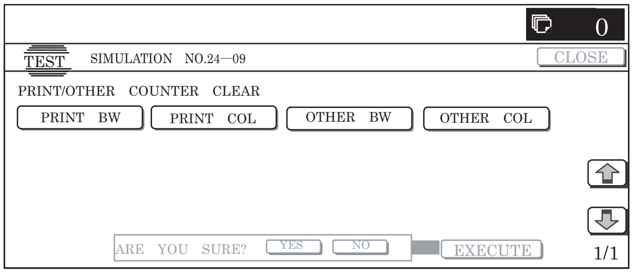
Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.

   The target counter is cleared.

PRINT BW	Printer (B/W) counter
PRINT COL	Printer (COLOR) counter
OTHER BW	Other (BW) counter
OTHER COL	Other (COLOR) counter


0
TEST
SIMULATION NO.24—09
CLOSE
PRINT/OTHER COUNTER CLEAR
PRINT BW
PRINT COL
OTHER BW
OTHER COL
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-10

Purpose : Data clear

Function (Purpose) : Used to clear the FAX counter. (Only when FAX is installed)

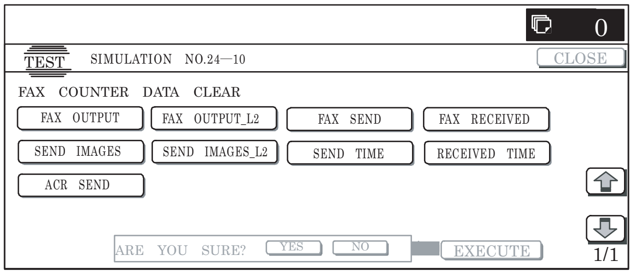
Section : —

Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.
   The target counter is cleared.

FAX OUTPUT	Print quantity counter (for line 1)
FAX OUTPUT_L2	Print quantity counter (for line 2)
FAX SEND	Send counter
FAX RECEIVED	FAX receive counter
SEND IMAGES	FAX send quantity counter (for line 1)
SEND IMAGES_L2	FAX send quantity counter (for line 2)
SEND TIME	FAX send time
RECEIVED TIME	FAX receive time
ACR SEND	Number of carrier prefix attached communications


0
TEST
SIMULATION NO.24—10
CLOSE
FAX COUNTER DATA CLEAR
FAX OUTPUT
FAX OUTPUT_L2
FAX SEND
FAX RECEIVED
SEND IMAGES
SEND IMAGES_L2
SEND TIME
RECEIVED TIME
ACR SEND
ARE YOU SURE?
YES
NO
EXECUTE
1/1

24-15

Purpose : Data clear

Function (Purpose) : Used to clear the counters related to the image send.

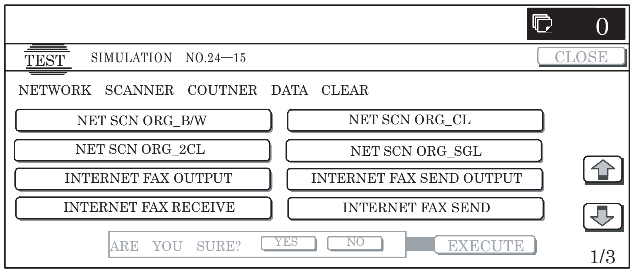
Section : —

Item : Counter

Operation/Procedure

1) Select the item to be cleared with the buttons on the touch panel.
2) Press [EXECUTE] button.
3) Press [YES] button.
   The target counter is cleared.

NET SCN ORG_B/W	Network scanner document read quantity counter (B/W) (B/W scan job)
NET SCN ORG_CL	Network scanner document read quantity counter (COLOR) (COLOR scan job)
NET SCN ORG_2CL	Network scanner document read quantity counter (2-color) (2-color scan job)
NET SCN ORG_SGL	Network scanner document read quantity counter (Single) (Single scan job)
INTERNET FAX OUTPUT	Internet FAX output quantity
INTERNET FAX SEND OUTPUT	Internet FAX send quantity
INTERNET FAX RECEIVE	Number of internet FAX receive
INTERNET FAX SEND	Number of internet FAX send
MAIL COUNTER	Number of E-Mail send
FTP COUNTER	Number of FTP send
SMB SEND	Numeric SMB send
USB CNT	Number of USB save
TRIAL MODE_B&C	Trial mode counter (B/W & COLOR scan job)
SCAN TO HDD_B/W	Scan to HDD record quantity (B/W)
SCAN TO HDD_CL	Scan to HDD record quantity (COLOR)
SCAN TO HDD_2CL	Scan to HDD record quantity (2-color)
SCAN TO HDD_SGL	Scan to HDD record quantity (Single color)


0
TEST
SIMULATION NO.24—15
CLOSE
NETWORK SCANNER COUTNER DATA CLEAR
NET SCN ORG_B/W
NET SCN ORG_CL
NET SCN ORG_2CL
NET SCN ORG_SGL
INTERNET FAX OUTPUT
INTERNET FAX SEND OUTPUT
INTERNET FAX RECEIVE
INTERNET FAX SEND
ARE YOU SURE?
YES
NO
EXECUTE
1/3

24-30

Purpose : Data clear

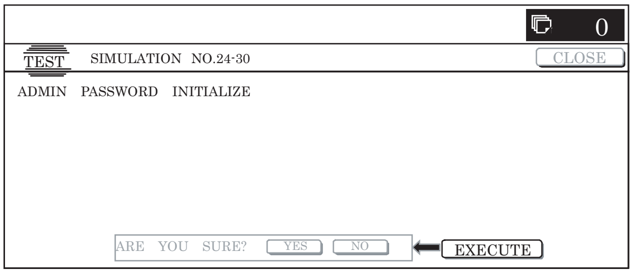
Function (Purpose) : Used to initialize the administrator password.

Section : —

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button.
   The administrator password is initialized.


0
TEST
SIMULATION NO.24-30
CLOSE
ADMIN PASSWORD INITIALIZE
ARE YOU SURE?
YES
NO
EXECUTE

24-31

Purpose : Data clear

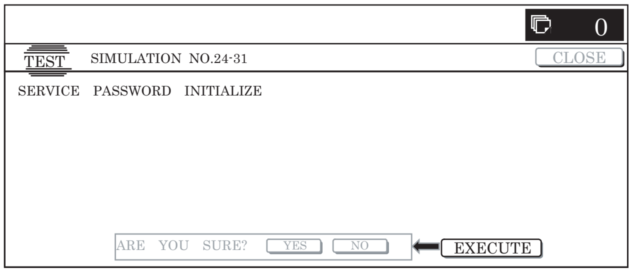
Function (Purpose) : Used to initialize the service mode password.

Section : —

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.
2) Press [YES] button.
   The service mode password is initialized.


0
TEST
SIMULATION NO.24-31
CLOSE
SERVICE PASSWORD INITIALIZE
ARE YOU SURE?
YES
NO
EXECUTE

25

25-1

Purpose : Operation test/Check

Function (Purpose) : Used to check the operations of the developing section.

Section : Process (Developing section)

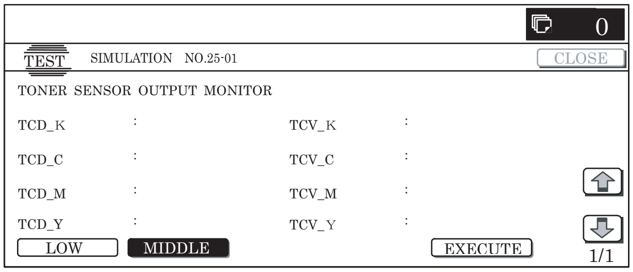
Item : Operation

Operation/Procedure

1) Select the process speed with [MIDDLE] and [LOW] buttons.
2) Press [EXECUTE] button.

   The developing motor and the OPC drum motor rotate for 3 min and the detection level of the toner density sensor is displayed.

TCD_K	Toner concentration sensor K
TCD_C	Toner concentration sensor C
TCD_M	Toner concentration sensor M
TCD_Y	Toner concentration sensor Y
TCV_K	Toner concentration control voltage K
TCV_C	Toner concentration control voltage C
TCV_M	Toner concentration control voltage M
TCV_Y	Toner concentration control voltage Y



SIMULATION NO.25-01

TONER SENSOR OUTPUT MONITOR

TCD_K :
TCV_K :
TCD_C :
TCV_C :
TCD_M :
TCV_M :
TCD_Y :
TCV_Y :

25-2

Purpose : Setting

Function (Purpose) : Used to make the initial setting of toner concentration when replacing developer.

Section : Process (Photoconductor/Developing/Transfer/Cleaning)

Item : Adjustment

Operation/Procedure

1) Select the adjustment target with the buttons on the touch panel.
2) Press [EXECUTE] button.

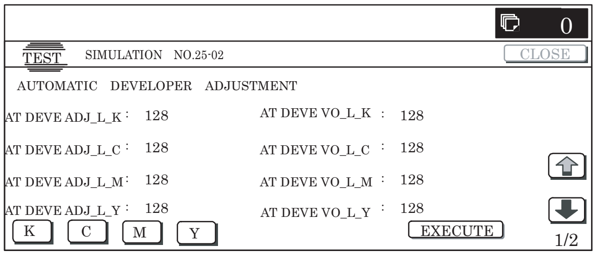
   The toner concentration sensor makes sampling of toner concentration to display the detection level.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EC, EE-EL or EE-EU is displayed, the reference toner concentration level is not set normally.

Display items	Item descriptions	Display range	Default value
AT DEVE ADJ_L_K	Automatic developer adjustment value at low speed	1 – 255	128
AT DEVE ADJ_L_C		1 – 255	128
AT DEVE ADJ_L_M		1 – 255	128
AT DEVE ADJ_L_Y		1 – 255	128
AT DEVE ADJ_M_K	Automatic developer adjustment value at middle speed	1 – 255	128
AT DEVE ADJ_M_C		1 – 255	128
AT DEVE ADJ_M_M		1 – 255	128
AT DEVE ADJ_M_Y		1 – 255	128

Display items	Item descriptions	Display range	Default value
AT DEVE VO_L_K	Automatic developer adjustment control voltage at low speed	1 – 255	128
AT DEVE VO_L_C		1 – 255	128
AT DEVE VO_L_M		1 – 255	128
AT DEVE VO_L_Y		1 – 255	128
AT DEVE VO_M_K	Automatic developer adjustment control voltage at middle speed	1 – 255	128
AT DEVE VO_M_C		1 – 255	128
AT DEVE VO_M_M		1 – 255	128
AT DEVE VO_M_Y		1 – 255	128

TCD_K	Toner concentration sensor K
TCD_C	Toner concentration sensor C
TCD_M	Toner concentration sensor M
TCD_Y	Toner concentration sensor Y
TCV_K	Toner concentration control K
TCV_C	Toner concentration control C
TCV_M	Toner concentration control M
TCV_Y	Toner concentration control Y



SIMULATION NO.25-02

AUTOMATIC DEVELOPER ADJUSTMENT

AT DEVE ADJ_L_K : 128
AT DEVE VO_L_K : 128
AT DEVE ADJ_L_C : 128
AT DEVE VO_L_C : 128
AT DEVE ADJ_L_M : 128
AT DEVE VO_L_M : 128
AT DEVE ADJ_L_Y : 128
AT DEVE VO_L_Y : 128

26

26-1

Purpose : Setting

Function (Purpose) : Used to set the paper exit tray (MX-TRX1).

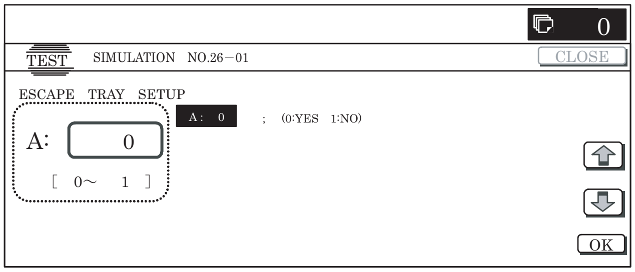
Section : Paper exit

Item : Setting

Operation/Procedure

1) Enter the set value with 10-key.
2) Press [OK] button to save the entered content in step 1).

Item	Display	Content		Set range	Default
A	(0:YES 1:NO)	0	Escape tray YES	0 to 1	1 (NO)
		1	Escape tray NO		



SIMULATION NO.26−01

ESCAPE TRAY SETUP

A : 0 ; (0:YES 1:NO)

A: 0

[0～ 1]

26-2

Purpose : Setting

Function (Purpose) : Used to set the paper size of the large capacity tray (LCC). (When the paper size is changed, this simulation must be executed to change the paper size in software.)

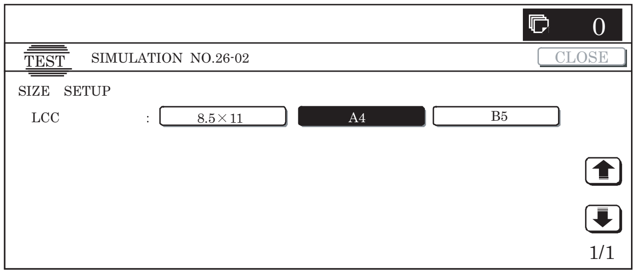
Section : Paper feed

Item : Setting

Operation/Procedure

Select the paper size with the buttons on the touch panel.

LCC	0	8.5 x 11 (Default: U.S.A, Canada, Inch)
	1	A4 (Japan, AB_B, Europe, U.K, Australia, AB_A)
	2	B5



SIMULATION NO.26-02

SIZE SETUP

LCC : 8.5×11 A4 B5

26-3

Purpose : Setting

Function (Purpose) : Used to set the specifications of the auditor.

Section : Auditor

Item : Specifications

Operation/Procedure

Select the set target with the button on the touch panel.

When a button is pressed, the set content is saved.

Item	Button display	Content	Default
BUILT-IN AUDITOR	P10	Built-in auditor mode (standard mode) operation	P10
	EC1	The built-in auditor mode is changed to EC1.	
OUTSIDE AUDITOR	NONE	Normal operation	NONE
	P VENDOR1	Vendor mode for old-type coin vendor. Control in the copy mode only.	
	P OTHER	Vendor mode for the other external auditor connected to the coin vendor I/F	
DOC ADJ	ON	Document filing function enabled	OFF
	OFF	Document filing function disabled	
PF ADJ	ON	Continuous paper feed is performed.	OFF
	OFF	Continuous paper feed is not performed.	
VENDOR MODE (*)	MODE1	Vendor mode 1	MODE3
	MODE2	Vendor mode 2	
	MODE3	Vendor mode 3	
COUNTUP TIMING1	FUSER_IN	The charging timing is when passing the sensor paper lead edge after fusing.	EXIT_OUT
	FUSER_OUT	The charging timing is when passing the sensor paper rear edge after fusing.	
	EXIT_OUT	The charging timing is when passing the (machine, right) tray/after-process unit paper exit sensor paper rear edge.	

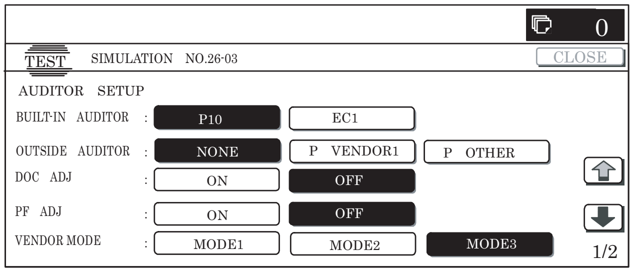
(*): AR-C260 series VENDOR MODE is supported.

Diagnosis setting	The specified quantity is completed. Remainder of money left.	Insufficient money during copy job		The specified quantity is completed. No remainder of money.
		BLACK/ COLOR (No remainder of money)	COLOR (Remainder of money left)	
	Condition 1	Condition 2	Condition 3	Condition 4
MODE1	Operation 1	Operation 2	Operation 2	Operation 1
MODE2	Operation 1	Operation 1	Operation 2	Operation 1
MODE3	Operation 1	Operation 3	Operation 2	Operation 3

Operation 1: Wait for auto clear setting time. Default, 60sec. Can be changed by the system setting.

Operation 2: Auto clear is not made.

Operation 3: Setting is immediately cleared. The display returns to the initial screen.



SIMULATION NO.26-03

AUDITOR SETUP

BUILT-IN AUDITOR : P10 EC1

OUTSIDE AUDITOR : NONE P VENDOR1 P OTHER

DOC ADJ : ON OFF

PF ADJ : ON OFF

VENDOR MODE : MODE1 MODE2 MODE3

26-5

Purpose : Setting

Function (Purpose) : Used to set the count mode of the total counter and the maintenance counter.

Section : —

Item : Counter

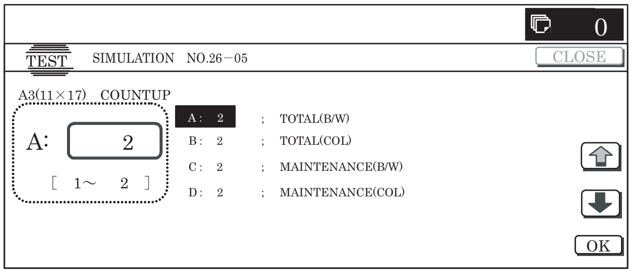
Operation/Procedure

1) Select the set item with [↑] [↓] buttons.
2) Enter the set value with 10-key.
3) Press [OK] button.

   The set content in step 2) is saved. (Count-up number for A3 paper is 1 or 2.)

Item	Display	Content	Setting range *	Default
A	TOTAL (B/W)	Total counter (BLACK)	1 to 2	2
B	TOTAL (COL)	Total counter (COLOR)	1 to 2	2
C	MAINTENANCE (B/W)	Maintenance counter (BLACK)	1 to 2	2
D	MAINTENANCE (COL)	Maintenance counter (COLOR)	1 to 2	2
E	DEV (B/W)	Developer counter (BLACK)	1 to 2	2
F	DEV (COL)	Developer counter (COLOR)	1 to 2	2

* 1 = Count up by 1
2 = Count up by 2



SIMULATION NO.26−05

A3(11×17) COUNTUP

A: 2

[1~ 2]

A : 2 ; TOTAL(B/W)
B : 2 ; TOTAL(COL)
C : 2 ; MAINTENANCE(B/W)
D : 2 ; MAINTENANCE(COL)

26-6

Purpose : Setting

Function (Purpose) : Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination.

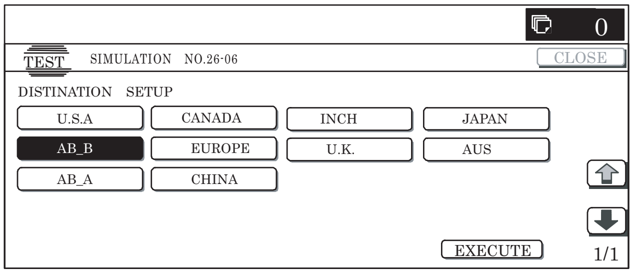
Section : —

Item : Specifications (Destination)

Operation/Procedure

1) Select the set target with the button on the touch panel.
2) Press [EXECUTE] button.
   The selected set content is saved.

U.S.A.	United States of America
CANADA	Canada
INCH	Inch series, other destinations
JAPAN	Japan
AB_B	AB series (B5 detection), other destinations
EUROPE	Europe
U.K.	United Kingdom
AUS.	Australia
AB_A	AB series (A5 detection), other destinations
CHINA	China



SIMULATION NO.26-06

DESTINATION SETUP

26-10

Purpose : Setting

Function (Purpose) : Used to set the trial mode of the network scanner.

Section : —

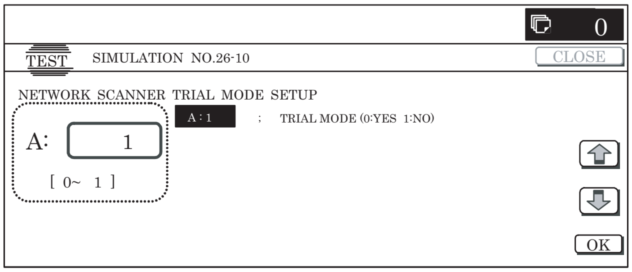
Item : Operation

Operation/Procedure

1) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
2) When [OK] button is pressed, the current entered value is saved to EEPROM and RAM.
   * When [COLOR], or [BLACK] key is pressed, the value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	TRIAL MODE (0:YES 1:NO)	0	Trial mode setting	0 to 1	1
		1	Trial mode cancel		



SIMULATION NO.26-10

NETWORK SCANNER TRIAL MODE SETUP

A: 1

[0~ 1]

A : 1 ; TRIAL MODE (0:YES 1:NO)

26-18

Purpose : Setting

Function (Purpose) : Used to set the toner save mode.

Section : —

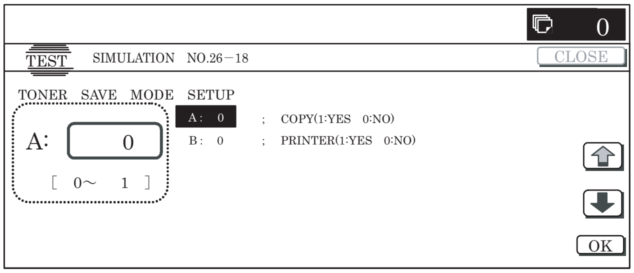
Item : —

Operation/Procedure

1) Use [↑] and [↓] buttons to select an item.
   The set value is highlighted and the value is displayed in the setting area.
   * When there is an item over [↑], the display becomes active and shifts to another item.
     When there is no item over [↑], the display grays out and the operation is disabled.
     When there is an item under [↓], the display becomes active and shifts to another item.
     When there is no item under [↓], the display grays out and the operation is disabled.
2) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
3) When [OK] button is pressed, the current entered value is saved to EEPROM and RAM.
   * When [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	COPY (1:YES 0:NO)	0	Copy toner save mode is allowed	0 to 1	0
		1	Copy toner save mode is inhibited.		
B	PRINTER (1:YES 0:NO)	0	Printer toner save mode is allowed.	0 to 1	0
		1	Printer toner save mode is inhibited.		



SIMULATION NO.26−18

TONER SAVE MODE SETUP

A: 0

[0~ 1]

A : 0 ; COPY(1:YES 0:NO)
B : 0 ; PRINTER(1:YES 0:NO)

26-30

Purpose : Setting

Function (Purpose) : Used to set allow/inhibit of HL slow-up control (CE mark support control).

Section : —

Item : Specifications (Operation mode (common operation))

Operation/Procedure

1) When the machine enters the simulation, the following screen is displayed.
2) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
3) When [OK] button is pressed, the current entered value is saved to EEPROM and RAM.
   * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

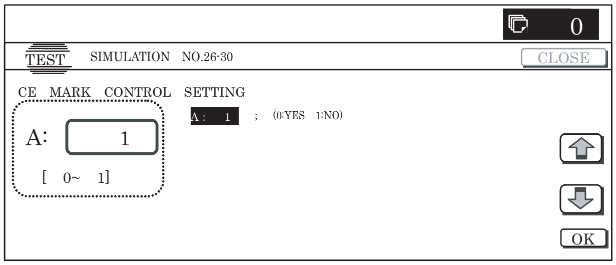
<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	(0:YES 1:NO)	0	CE mark control allowed	0 to 1	Refer to <Initial value and set value linked with the destination>.
		1	CE mark control inhibited		

NOTE: Even though the control is allowed, the CE mark support control may not be executed depending on the power frequency, etc.

<Initial value and set value linked with the destination>

Destination	Setting value
U.S.A	1 (CE not supported)
CANADA	1 (CE not supported)
INCH	1 (CE not supported)
JAPAN	1 (CE not supported)
AB_B	1 (CE not supported)
EUROPE	0 (CE supported)
U.K	0 (CE supported)
AUS.	0 (CE supported)
AB_A	0 (CE supported)
CHINA	0 (CE supported)



SIMULATION NO.26-30

CE MARK CONTROL SETTING

A: 1 ; (0:YES 1:NO)

A: 1

[0~ 1]

26-35

Purpose : Setting

Function (Purpose) : Used to set the trouble memory saving procedure.

Section : —

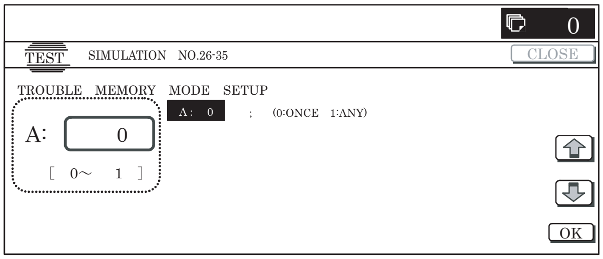
Item : —

Operation/Procedure

1) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
2) When [OK] button is pressed, the current entered value is saved to EEPROM and RAM.
   * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	(0:ONCE 1:ANY)	0	Only once. If same as the previous one, it is not saved.	0 to 1	0
		1	Any time. Though same as the previous one, it is saved.		



SIMULATION NO.26-35

TROUBLE MEMORY MODE SETUP

A: 0 ; (0:ONCE 1:ANY)

A: 0

[0~ 1]

26-38

Purpose : Setting

Function (Purpose) : Used to set Continue/Stop of print when the developer life is reached.

Section : Other

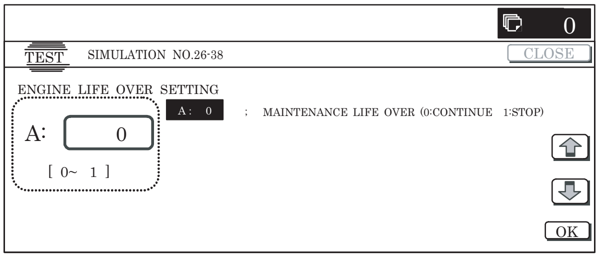
Item : Specifications (Operation mode)

Operation/Procedure

1) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
2) When [OK] button is pressed, the current entered value is saved to EEPROM and RAM.
   * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	MAINTENANCE LIFE OVER (0:CONTINUE 1:STOP)	0	Continue/Stop setting of print when the maintenance life is over (Print Continue)	0 to 1	0
		1	Continue/Stop setting of print when the maintenance life is over (Print Stop)		



SIMULATION NO.26-38

ENGINE LIFE OVER SETTING

A: 0 ; MAINTENANCE LIFE OVER (0:CONTINUE 1:STOP)

A: 0

[0~ 1]

26-41

Purpose : Setting

Function (Purpose) : Used to set YES/NO of AMS setting in the center binding mode.

Section : —

Item : Specifications (Operation mode)

Operation/Procedure

1) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
2) When [OK] button is pressed, and the current entered value is saved to EEPROM and RAM.

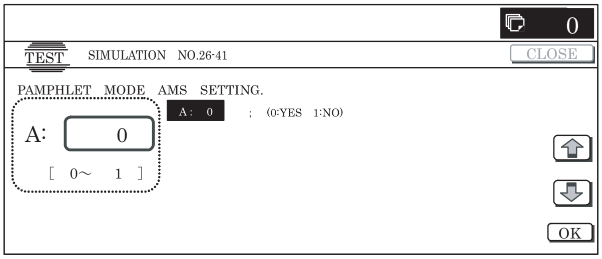
* When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	(0:YES 1:NO)	0	Center binding mode AMS setting	0 to 1	Refer to <Initial value and set value linked with the destination>.
		1	Center binding mode AMS cancel		

<Initial value and set value liked with the destination>

Destination	Setting value
U.S.A	0 (Cancel)
CANADA	0 (Cancel)
INCH	0 (Cancel)
JAPAN	0 (Cancel)
AB_B	0 (Cancel)
EUROPE	1 (Setting)
U.K	1 (Setting)
AUS.	0 (Cancel)
AB_A	0 (Cancel)
CHINA	0 (Cancel)



SIMULATION NO.26-41

PAMPHLET MODE AMS SETTING.

A: 0 ; (0:YES 1:NO)

A: 0

[0～ 1]

26-49

Purpose : Setting

Function (Purpose) : Used to set the copy speed mode.

Section : —

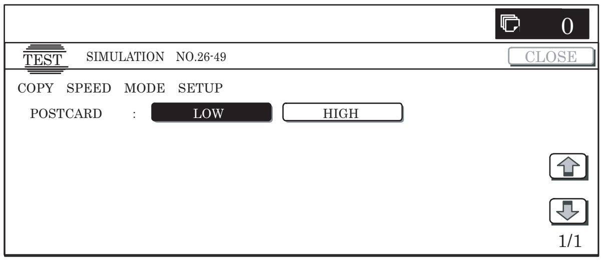
Item : Setting

Operation/Procedure

1) When the machine enters Simulation 26-49, the current set status is displayed.
   * The current set button is highlighted.
2) Select an item to be changed, and it is highlighted. The setting is saved to EEPROM and RAM.
   * Only one can be selected for each item.

<Item description>

Item	Set value	Content	Default value
POSTCARD	LOW	Postcard copy speed LOW	LOW
	HIGH	Postcard copy speed HIGH	



SIMULATION NO.26-49

COPY SPEED MODE SETUP

POSTCARD : LOW HIGH

26-50

Purpose : Setting

Function (Purpose) : Used to set functions.

Section : —

Item : Specifications (Operation)

Operation/Procedure

1) Select an item to be set with [↑] and [↓] buttons.

   The selected value is highlighted and the value is displayed in the setting area.
   * When there is an item over [↑], the display becomes active and shifts to another item.

     When there is no item over [↑], the display grays out and the operation is disabled.

     When there is an item under [↓], the display becomes active and shifts to another item.

     When there is no item under [↓], the display grays out and the operation is disabled.
2) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
3) When [OK] button is pressed, the entered value is set.
   * When [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display		Content description	Setting range	Default value
A	BW REVERSE	YES	B/W REVERSE allowed	0 – 1	<Setting range and default value of each set value> Refer to "Setting value A."
		NO	B/W REVERSE inhibited	0 – 1	
B	COLOR MODE		2-color/Single color inhibit setting	0 to 7	<Setting range and default value of each set value> Refer to "Setting value B."
C	FINISHER FUNCTION	YES	The number of discharge of special paper from the finisher is limited.	0 – 1	0 (YES)
		NO	The number of discharge of special paper from the finisher is not limited.	0 – 1	

<Display when 2-color/Single color inhibit>

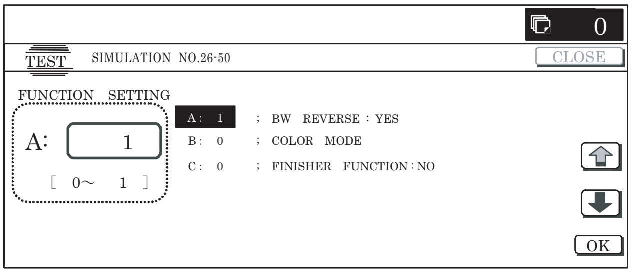
Mode inhibit		When 2-color/ Single color inhibit	SIM setting
Single	2-color		
OFF	OFF	OFF	0
OFF	ON	OFF	1
ON	OFF	OFF	2
ON	ON	OFF	3
OFF	OFF	ON	4
OFF	ON	ON	5
ON	OFF	ON	6
ON	ON	ON	7

* OFF: Inhibit cancel state

ON: Inhibit state

<Setting range and default value of each set value>

Destination	Setting value A	Setting value B
U.S.A	1 (Display allowed)	0
CANADA	1 (Display allowed)	0
INCH	1 (Display allowed)	0
JAPAN	1 (Display allowed)	7
AB_B	1 (Display allowed)	0
EUROPE	1 (Display allowed)	0
U.K	0 (Display inhibited)	0
AUS.	1 (Display allowed)	0
AB_A	1 (Display allowed)	0
CHINA	1 (Display allowed)	0



SIMULATION NO.26-50

FUNCTION SETTING

A: 1

[0~ 1]

A: 1 ; BW REVERSE : YES
B: 0 ; COLOR MODE
C: 0 ; FINISHER FUNCTION : NO

26-52

Purpose : Setting

Function (Purpose) : Used to set whether non-printed paper (insertion paper, cover paper) is counted up or not.

Section : —

Item : —

Operation/Procedure

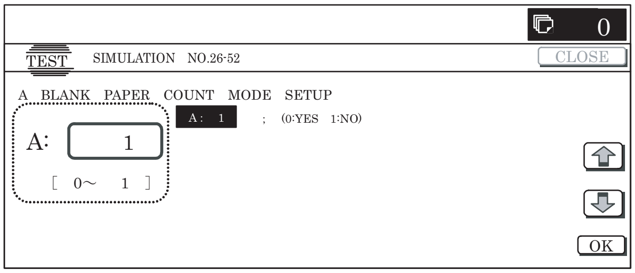
1) Enter the set value with 10-key.
    * Press [C] key to clear the entered value.
2) When [OK] button is pressed, the entered value is set.
    * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	(0:YES 1:NO)	0	White paper countup (YES)	0 to 1	Refer to <List of default values depending on destinations>.
		1	White paper coutup (NO)		

<List of default values depending on destinations>

Destination	Setting value
U.S.A	0 (countup)
CANADA	0 (countup)
INCH	0 (countup)
JAPAN	1 (No countup)
AB_B	0 (countup)
EUROPE	0 (countup)
U.K	0 (countup)
AUS.	1 (No countup)
AB_A	0 (countup)
CHINA	0 (countup)



SIMULATION NO.26-52

A BLANK PAPER COUNT MODE SETUP

A: 1

[0~ 1]

A: 1 ; (0:YES 1:NO)

26-53

Purpose : Setting

Function (Purpose) : Used to set YES/NO of the auto color calibration.

Section : —

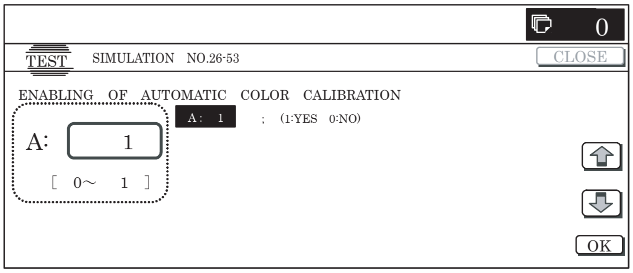
Item : —

Operation/Procedure

1) Enter the set value with 10-key.
    * Press [C] key to clear the entered value.
2) When [OK] button is pressed, the current set value is saved to EEPROM and RAM.
    * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default value
A	(1:YES 0:NO)	1	ACC YES	0 to 1	1
		0	ACC NO		



SIMULATION NO.26-53

ENABLING OF AUTOMATIC COLOR CALIBRATION

A: 1

[0~ 1]

A: 1 ; (1:YES 0:NO)

26-54

Purpose : Setting

Function (Purpose) : Used to set the printer calibration YES/NO.

Section : Printer

Item : Operation

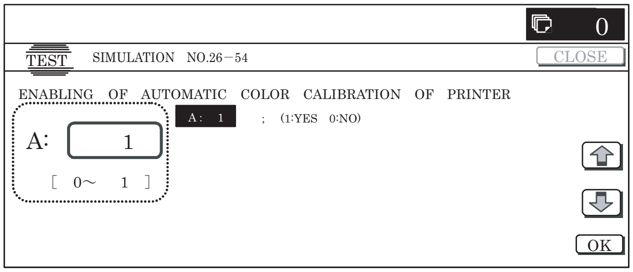
Operation/Procedure

1) Enter the set value with 10-key.
    * Press [C] key to clear the entered value.
2) When [OK] button is pressed, and the current set value is saved to EEPROM and RAM.

    After completion of setting, [OK] button returns to the normal display.
    * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each value>

Item	Display	Content		Setting range	Default value
A	(1:YES 0:NO)	1	ACC YES	0 – 1	1
		0	ACC NO		



SIMULATION NO.26−54

ENABLING OF AUTOMATIC COLOR CALIBRATION OF PRINTER

A: 1

[0~ 1]

A: 1 ; (1:YES 0:NO)

26-65

Purpose : Setting

Function (Purpose) : Used to set the finisher alarm mode.

Section : —

Item : Specifications

Operation/Procedure

1) When the machine enters Simulation 26-65, the following screen is displayed.
   * The current set value is highlighted.
2) When the set value button of an item to be changed is pressed, it is highlighted and the setting is saved to EEPROM and RAM.
   * Only one can be selected for each item.

<Item description>

Item	Set value	Content	Setting range	Default value
LIMIT SHEETS	30	Staple limit sheets: 30 sheets	30 or 50	30
	50	Staple limit sheets: 50 sheets		
LIMIT COPIES	ON	Staple limit copies ON	ON or OFF	ON
	OFF	Staple limit copies OFF		

<LIMIT SHEETS>

* Valid only when the 1K finisher is installed.

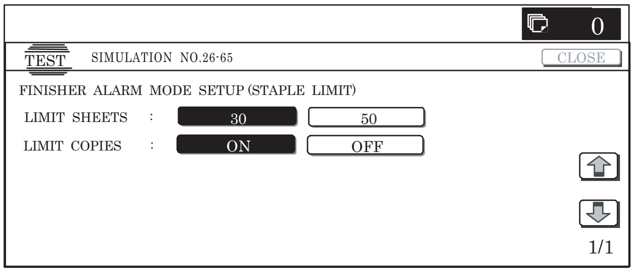
[Target paper size]

Staplable S-size paper described on the product specifications

A4, A4R, B5, B5R, 8.5 x 11, 8.5 x 11R, 16K, 16KR

* 25 sheets for L-size paper (A3, B4, 11 x 17, 8.5 x 14, 8.5 x 13, 8K) regardless of setting

* 25 sheets for mixed loading of a same width regardless of setting



SIMULATION NO.26-65

FINISHER ALARM MODE SETUP (STAPLE LIMIT)

LIMIT SHEETS : [✓ 30] 50

LIMIT COPIES : [✓ ON] OFF

26-67

Purpose : Setting

Function (Purpose) : Used to set the summer time (switching timing to the summer time and the adjustment time (shift amount)) and the time zone (for switching to the summer time and the difference between the local time and GMT (UTC) for synchronization with the internet time server).

Section : —

Item : Specifications

Operation/Procedure

1) Select a mode to be set. ([SUMMER TIME] is selected in this example.)
   * When [TIME ZONE] or [SUMMER TIME] button is pressed, it is highlighted and item of the selected button is displayed.
   * Only one can be selected, and the selected button is highlighted.
     In the default display, [TIME ZONE] is selected.
2) Change the set item with [↑] and [↓] buttons.
   The highlighted section of the set value is switched and the value is displayed in the setting area.
   * When there is an item over [↑], the display becomes active and shifts to another item.
     When there is no item over [↑], the display grays out and the operation is disabled.
     When there is an item under [↓], the display becomes active and shifts to another item.
     When there is no item under [↓], the display grays out and the operation is disabled.
3) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
4) When [OK] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM.
   After completion of setting, [OK] button returns to the normal display.
   * When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each value>

Category		Item	Display		Content	Setting range	Default value	Remark
TIME ZONE		A	GMT +/-	+	GMT +/–	0	1	
				–		1		
		B	GMT HOUR		GMT HOUR	0 to 13	*	
		C	GMT MINUTE		GMT MINUTE	0 to 59	*	
		D	INTERNET	YES	Internet time YES/ NO	0	*	When YES, time is synchronized with the internet time server.
				NO		1		
SUMMER TIME	Common	A	AUTO SUMMER TIME ADJ	ON	Auto summertime setting ON/OFF	0	*	
				OFF		1		
		B	ADJ TIME HOUR		Adjustment time HOUR	0 to 23	1	
		C	ADJ TIME MINUTE		Adjustment time MINUTE	0 to 59	*	

Category		Item	Display		Content	Setting range	Default value	Remark
SUMMER TIME	Start time setting	D	START TIME MONTH		Start time MONTH	1 to 12	*	
		E	START TIME DAY		Start time DAY	1 to 31	*	When the set value is changed, it is reflected to the START MODE.
		F	START TIME WEEK		Start time WEEK	1 to 5	*	
		G	START TIME A DAY OF THE WEEK	MONDAY	Stat time DAY OF THE WEEK	1	*	
				TUESDAY		2		
				WEDNESDAY		3		
				THURSDAY		4		
				FRIDAY		5		
				SATURDAY		6		
				SUNDAY		7		
		H	START TIME HOUR		Start time HOUR	0 to 23	*	
		I	START TIME MINUTE		Start time MINUTE	0 to 59	*	
		J	START MODE	DAY	Start mode	0	*	Specified with date (Related item: E)
				WEEK & A DAY OF THE WEEK		1		Specified with WEEK, DAY OF THE WEEK. (Related item: F, G)
		K	START UTC	YES	UTC YES/NO	0	*	When set to YES, values of D to I are not used.
				NO		1		
	End time setting	L	END TIME MONTH		End time MONTH	1 to 12	*	
		M	END TIME DAY		End time DAY	1 to 31	*	When the set value is changed, it is reflected to END MODE.
		N	END TIME WEEK		End time WEEK	1 to 5	*	
		O	END TIME A DAY OF THE WEEK	MONDAY	End time DAY OF THE WEEK	1	*	
				TUESDAY		2		
				WEDNESDAY		3		
				THURSDAY		4		
				FRIDAY		5		
				SATURDAY		6		
				SUNDAY		7		
		P	END TIME HOUR		End time HOUR	0 to 23	*	
		Q	END TIME MINUTE		End time MINUTE	0 to 59	*	
		R	END MODE	DAY	End mode	0	*	Specified with DATE (Related item: M)
				WEEK & A DAY OF THE WEEK		1		Specified with WEEK, DAY OF WEEK (Related item: N, O)
		S	END UTC	YES	UTC YES/NO	0	*	When set to YES, values of L to Q are not used.
				NO		1		

Displays of Item A, D, G, J, K, O, R, S are "Item name: Detail."

Example: PAPER: CS1

*: Refer to <<Initial value and set value linked with the destination>>.

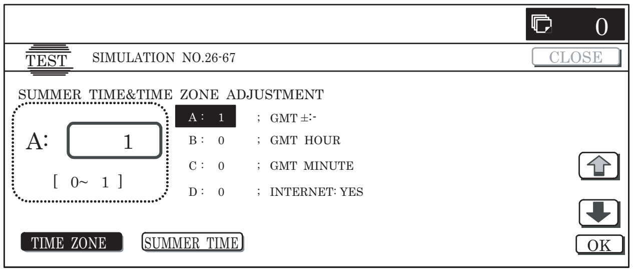
<Initial value/set value liked with the destination>

Setting value	Destination									
	U.S.A	CANADA	INCH	JAPAN	AB_B	EUROPE	U.K.	AUS.	AB_A	CHINA
Time zone correction value (hour)	–5 (Hour)	–5 (Hour)	–5 (Hour)	9 (Hour)	8 (Hour)	0 (Hour)	0 (Hour)	10 (Hour)	8 (Hour)	8 (Hour)
Time zone correction value (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)
Summer time enable/ disable flag	Summer OFF	Summer OFF	Summer OFF	Summer OFF	Summer OFF	Summer ON	Summer ON	Summer ON	Summer OFF	Summer OFF
Summer time start date (Month)	4 (Month)	4 (Month)	1 (Month)	1 (Month)	1 (Month)	3 (Month)	3 (Month)	10 (Month)	1 (Month)	1 (Month)
Summer time start date (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)
Summer time start date (Hour)	2 (Hour)	2 (Hour)	1 (Hour)	1 (Hour)	1 (Hour)	1 (Hour)	1 (Hour)	2 (Hour)	1 (Hour)	1 (Hour)
Summer time start date (Minute)	0 (Minute)	0 (Minute)	0 (Minute)	0 (Minute)	0 (Minute)	0 (Minute)	0 (Minute)	0 (Minute)	0 (Minute)	0 (Minute)
Summer time start date (Week)	1 (Week)	1 (Week)	1 (Week)	1 (Week)	1 (Week)	5 (Week)	5 (Week)	5 (Week)	1 (Week)	1 (Week)
Summer time start date (Day of week)	0 (Sunday)	0 (Sunday)	1 (Monday)	1 (Monday)	1 (Monday)	0 (Sunday)	0 (Sunday)	0 (Sunday)	1 (Monday)	1 (Monday)

Setting value	Destination									
	U.S.A	CANADA	INCH	JAPAN	AB_B	EUROPE	U.K.	AUS.	AB_A	CHINA
Day of week specifying flag	0 (Day of week specifying)	0 (Day of week specifying)	1 (Day specifying)	1 (Day specifying)	1 (Day specifying)	0 (Day of week specifying)	0 (Day of week specifying)	0 (Day of week specifying)	1 (Day specifying)	1 (Day specifying)
UTC specifying flag	0 (UTC OFF)	0 (UTC OFF)	1 (UTC ON)	1 (UTC ON)	1 (UTC ON)	1 (UTC ON)	1 (UTC ON)	0 (UTC OFF)	1 (UTC ON)	1 (UTC ON)
Summer time end date (Month)	10 (Month)	10 (Month)	1 (Month)	1 (Month)	1 (Month)	10 (Month)	10 (Month)	3 (Month)	1 (Month)	1 (Month)
Summer time end date (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)	1 (Day)
Summer time end date (Hour)	2 (Hour)	2 (Hour)	1 (Hour)	1 (Hour)	1 (Hour)	1 (Hour)	1 (Hour)	3 (Hour)	1 (Hour)	1 (Hour)
Summer time end	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)
Week of summer time end	5th (week)	5th (week)	1st (week)	1st (week)	1st (week)	5th (week)	5th (week)	5th (week)	1st (week)	1st (week)
Day of week of summer time end	0 (Sunday)	0 (Sunday)	1 (Monday)	1 (Monday)	1 (Monday)	0 (Sunday)	0 (Sunday)	0 (Sunday)	1 (Monday)	1 (Monday)
Flag to specify the day of week	0 (Day of week is specified)	0 (Day of week is specified)	1 (Date specification)	1 (Date specification)	1 (Date specification)	0 (Day of week is specified)	0 (Day of week is specified)	0 (Day of week is specified)	1 (Date specification)	1 (Date specification)
Flag to specify UTC	UTC OFF	UTC OFF	UTC ON	UTC ON	UTC ON	UTC ON	UTC ON	UTC OFF	UTC ON	UTC ON
Summer time correction value (Hour)	1 (Hour)	1 (Hour)	0 (Hour)	0 (Hour)	0 (Hour)	0 (Hour)	0 (Hour)	1 (Hour)	0 (Hour)	0 (Hour)
Summer time correction value (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)	0 (minute)
Flag to synchronize with the internet clock server	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

<Reflection of items J and R after settlement of the value>

When the values of E to G (M to O) are changed and settled and [OK] button is pressed, the values are saved to EEPROM and RAM and set to Item J (R) at the same time.


SIMULATION NO.26-67

SUMMER TIME&TIME ZONE ADJUSTMENT

A: 1

[0~ 1]

A : 1 ; GMT ±:-

B : 0 ; GMT HOUR

C : 0 ; GMT MINUTE

D : 0 ; INTERNET: YES

26-69

Purpose : Setting

Function (Purpose) : Used to set whether the toner preparation message and the toner near end message are displayed or not when the toner quantity reaches 25%.

Section : Process

Item : Specifications

Operation/Procedure

1) Select an item to be set with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and the value is displayed in the setting area.

   * When there is an item over [↑], the display becomes active and shifts to another item.

   When there is no item over [↑], the display grays out and the operation is disabled.

   When there is an item under [↓], the display becomes active and shifts to another item.

   When there is no item under [↓], the display grays out and the operation is disabled.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered value.

3) When [OK] button is pressed, the current set value is set.

   * When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

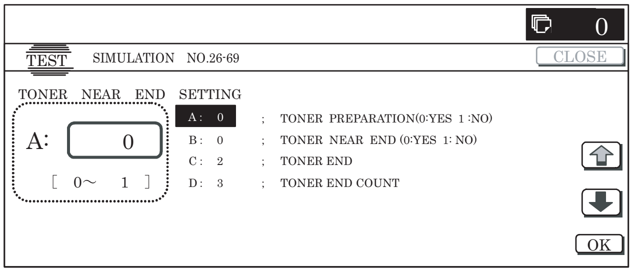
<Setting range and default value of each value>

Item	Display	Content		Setting range	Default value
A	TONER PREPARATION (0:YES 1:NO)	0	Toner preparation message is displayed.	0 to 1	0
		1	Toner preparation message is not displayed.		
B	TONER NEAR END (0:YES 1:NO)	0	Toner near end message is displayed.	0 to 1	0
		1	Toner near end message is not displayed.		

Item	Display	Content		Setting range	Default value
C	TONER END	1	Operation is enabled when TONER END. (*1)	1 to 3	2
		2	Operation is stopped when TONER END. (*2)		
		3	Operation is stopped when TONER END. (*3)		
D	TONER END COUNT	Used to set the number of detection of toner end.		1 to 5	3

<Set item C (TONER END) control content>

	TONER END flag detection	CRUM ID machine history check
*1	No detection	No detection
*2	No detection	Detection
*3	Detection	Detection



A : 0 ; TONER PREPARATION(0:YES 1 :NO)
B : 0 ; TONER NEAR END (0:YES 1: NO)
C : 2 ; TONER END
D : 3 ; TONER END COUNT

27

27-1

Purpose : Operation test/Check

Function (Purpose) : Used to set whether the detection of communication error with RIC (U7-00) is disabled or not.

Section : Communication (RIC/MODEM)

Item : Specifications (Operation mode)

Operation/Procedure

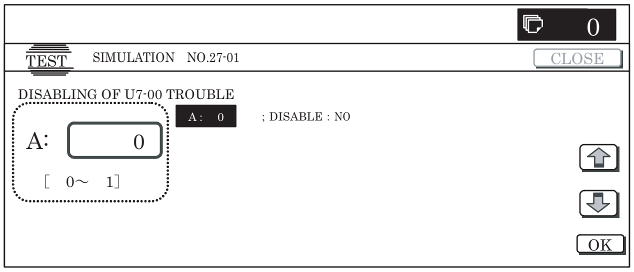
1) When the machine enters Simulation 27-01, following the screen is displayed.
2) Enter the set value with 10-key.
3) When [OK] button is pressed, and the current set value is saved to EEPROM and RAM.

   After completion of setting, [OK] button returns to the normal display.

   * When [OK] button, [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each value>

Item	Display		Content		Setting range		Default value
A	DISABLE	0: YES	(U7-00) Not detected	YES	0 to 1	0	0: Not detected
		1: NO		NO		1	



A : 0 ; DISABLE : NO

27-2

Purpose : Setting

Function (Purpose) : Used to set the FSS function (Password, HOST server TEL number).

Section : Communication (RIC/MODEM)

Item : Data (User data)

Operation/Procedure

1) When the machine enters Simulation 27-02, the screen is displayed.
2) Select a desired button.

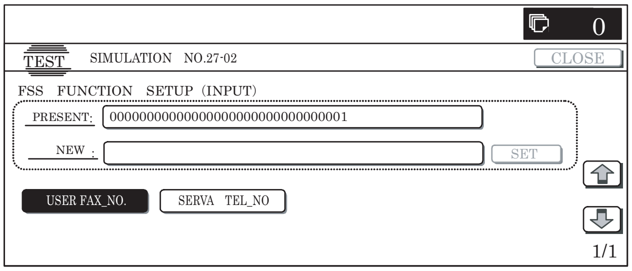
   The button is highlighted and the value is displayed.
3) Enter the set value with 10-key. The entered value is displayed at "NEW."

   * Press [C] key to clear the entered value.
4) When [SET] button is pressed, the entered value is set.

   When the entered value is set, it is displayed in "PRESENT:"

<Item and content descriptions>

Display	Description	Number of digits
USER FAX_NO.	Sender registration number	Max. 16 digits
SERVA TEL_NO.	HOST server TEL number	Max. 16 digits



PRESENT: 00000000000000000000000000000001
NEW :

27-4

Purpose : Setting

Function (Purpose) : Used to set the FSS functions (initializing, call, toner order auto send).

Section : Communication (RIC/MODEM)

Item : Data (User data)

Operation/Procedure

1) When the machine enters the simulation, the following screen is displayed.
2) Select an item to be set with [↑] and [↓] buttons.

   The highlighted section of the set value is changed and the value is displayed in the setting area.

   * When there is an item over [↑], the display becomes active and shifts to another item.

   When there is no item over [↑], the display grays out and the operation is disabled.

   When there is an item under [↓], the display becomes active and shifts to another item.

   When there is no item under [↓], the display grays out and the operation is disabled.
3) Enter the set value with 10-key.

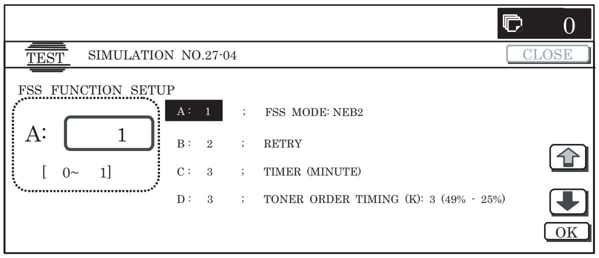
   * Press [C] key to clear the entered value.
4) When [OK] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM.

   After completion of setting, [OK] button returns to the normal display.

   * When [OK] button, [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each value>

Item	Display		Content		Setting range	Default value	Remark
A	FSS MODE	NEB1	FSS mode setting	Only send in NE-B mode	0	1	
		NEB2		Send/Receive in NE-B mode	1		
B	RETRY		Retry number setting		0 to 15	2	* 0: No retry
C	TIMER (MINUTE)		Retry timer setting (minute)		1 to 15	3	
D	TONER ORDER TIMING (K)	100% – 75%	Toner order auto send timing setting (K)	100% to 75%	5	3 (49% to 25%)	
		74% – 50%		74% to 50%	4		
		49% – 25%		49% to 25%	3		
		LOWER 25		25% or less	2		
		NEAREND		Near end	1		
		EMPTY		Empty	0		
E	TONER ORDER TIMING (C)	100% – 75%	Toner order auto send timing setting (C)	100% to 75%	5	3 (49% to 25%)	
		74% – 50%		74% to 50%	4		
		49% – 25%		49% to 25%	3		
		LOWER 25		25% or less	2		
		NEAREND		Near end	1		
		EMPTY		Empty	0		
F	TONER ORDER TIMING(M)	100% – 75%	Toner order auto send timing setting (M)	100 to 75%	5	3 (49% to 25%)	
		74% – 50%		74% to 50%	4		
		49% – 25%		49% to 25%	3		
		LOWER 25		25% or less	2		
		NEAREND		Near end	1		
		EMPTY		Empty	0		
G	TONER ORDER TIMING(Y)	100% – 75%	Toner order auto send timing setting (Y)	100% to 75%	5	3 (49% to 25%)	
		74% – 50%		74% to 50%	4		
		49% – 25%		49% to 25%	3		
		LOWER 25		25% or less	2		
		NEAREND		Near end	1		
		EMPTY		Empty	0		



SIMULATION NO.27-04

FSS FUNCTION SETUP

A: 1

[0~ 1]

A : 1 ; FSS MODE: NEB2

B : 2 ; RETRY

C : 3 ; TIMER (MINUTE)

D : 3 ; TONER ORDER TIMING (K): 3 (49% - 25%)

27-5

Purpose : Setting

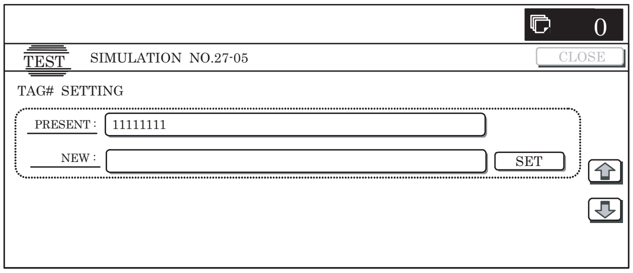
Function (Purpose) : Used to set the tag number.

Section : Communication (RIC/MODEM)

Item : Data (User data)

Operation/Procedure

1) When the machine enters Simulation 27-05, the following screen is displayed.
2) Enter the set value with 10-key. (Max. 8 digits)
   The entered value is displayed on "NEW."
   * Press [C] key to clear the entered value.
3) When [SET] button is pressed, the entered value is set.
   When the entered value is set, it is displayed in "PRESENT:" and "NEW" disappears.



SIMULATION NO.27-05

TAG# SETTING

PRESENT : 11111111

NEW :

27-6

Purpose : Setting

Function (Purpose) : Used to set YES/NO of the manual service call.

Section : Communication (RIC/MODEM)

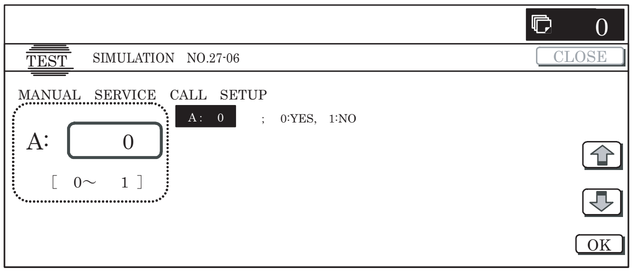
Item : Specifications

Operation/Procedure

1) Enter the set value with 10-key.
   * Press [C] key to clear the entered value.
2) When [OK] button is pressed, the current set value is saved to EEPROM and RAM.
   * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each value>

Item	Display	Content		Setting range	Default value
A	(0:YES 1:NO)	0	Manual service call YES	0 to 1	0
		1	Manual service call NO		



SIMULATION NO.27-06

MANUAL SERVICE CALL SETUP

A: 0

[0~ 1]

A : 0 ; 0:YES, 1:NO

27-7

Purpose : Setting

Function (Purpose) : Used to set the FSS functions (enable, alert callout).

Section : Communication (RIC/MODEM)

Item : Specifications

Operation/Procedure

1) When the machine enters the simulation, the following screen is displayed.
2) Select an item to be set with [↑] and [↓] buttons.

   The highlighted section of the set value is changed and the value is displayed in the setting area.

   * When there is an item over [↑], the display becomes active and shifts to another item.

   When there is no item over [↑], the display grays out and the operation is disabled.

   When there is an item under [↓], the display becomes active and shifts to another item.

   When there is no item under [↓], the display grays out and the operation is disabled.
3) Enter the set value with 10-key.

   * Press [C] key to clear the entered value.

   * In the FSS function setting, change from YES (0) to NO (1) cannot be made.
4) When [OK] button is pressed, the current set value is saved to EEPROM and RAM.

   * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

   * When [CA] key or [SYSTEM SETTINGS] key is pressed to exit the simulation, the machine is rebooted.

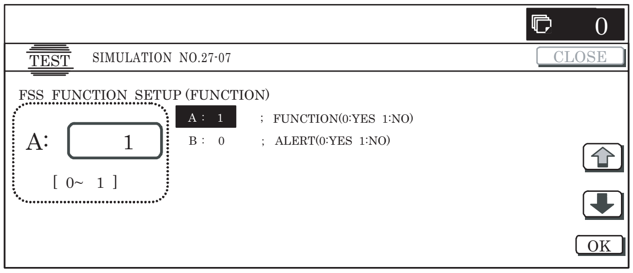
<Setting range and default value of each value>

Item	Display	Content		Setting range	Default value
A	FUNCTION (0:YES 1:NO)	0	FSS function is enabled.	0 to 1	1 (NO)
		1	FSS function is disabled. (*)		
B	ALERT (0:YES 1:NO)	0	Alert callout is enabled.	0 to 1	0 (YES)
		1	Alert callout is disabled.		

(*): In the FSS function setting, change from Disable to Enable can be made, but change from Disable to Enable cannot be made.

<Alert item>

Item	Send timing
No cause of callout	Initial/Trouble/Continuous JAM alert
Maintenance	Maintenance timing detection
Service call	When Service Call key is pressed.
Toner send request	When toner order auto send setting reaches.
Toner collect request	Toner installation data revision. However, only for a new product.
Alert resend	



SIMULATION NO.27-07

FSS FUNCTION SETUP (FUNCTION)

A: 1

[0~ 1]

A : 1 ; FUNCTION(0:YES 1:NO)

B : 0 ; ALERT(0:YES 1:NO)

27-9

Purpose : Setting

Function (Purpose) : Used to set the threshold value for determining whether the paper feed time between sensors is recorded or not and the threshold value for determining whether the gain adjustment retry number is recorded or not.

Section : —

Item : Specifications

Operation/Procedure

1) When the machine enters the simulation, the following screen is displayed.
2) Select an item to be set with [↑] and [↓] buttons.

   The highlighted section of the set value is changed and the value is displayed in the setting area.

   * When there is an item over [↑], the display becomes active and shifts to another item.

   When there is no item over [↑], the display grays out and the operation is disabled.

   When there is an item under [↓], the display becomes active and shifts to another item.

   When there is no item under [↓], the display grays out and the operation is disabled.
3) Enter the set value with 10-key.

   * Press [C] key to clear the entered value.
4) When [OK] button is pressed, the current set value is saved to EEPROM and RAM.

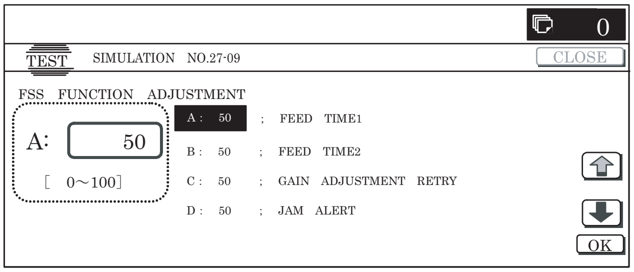
   After completion of setting, [OK] button returns to the normal display.

   * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Setting range and default value of each value>

Item	Display	Content	Setting range	Default value
A	FEED TIME1	Threshold value of paper feed time between sensors (Main unit)	0 to 100	50 (%)
B	FEED TIME2	Threshold value of paper feed time between sensors (SPF)	0 to 100	50 (%)
C	GAIN ADJUSTMENT RETRY	Threshold value of gain adjustment retry number	1 to 100	50 (TIMES)
D	JAM ALERT	Threshold value of continuous JAM alert judgment	1 to 100	10 (TIMES)

* Item A: 0% is the standard passing time between sheets. 100% is the time for judgment as a JAM between sheets.



SIMULATION NO.27-09

FSS FUNCTION ADJUSTMENT

A: 50

[0～100]

A : 50 ; FEED TIME1

B : 50 ; FEED TIME2

C : 50 ; GAIN ADJUSTMENT RETRY

D : 50 ; JAM ALERT

27-10

Purpose : Data clear

Function (Purpose) : Used to clear the trouble prediction history information.

Section : Communication (RIC/MODEM)

Item : Specifications

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted, and [YES] and [NO] buttons become active display.

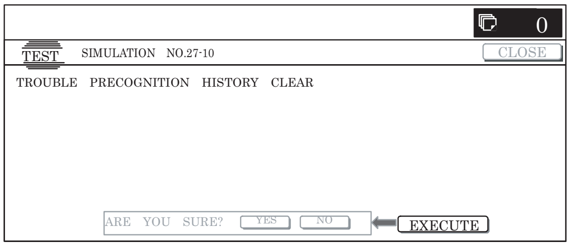
2) Press [YES] button.

   The history information of the trouble prediction information is cleared. [YES] button is highlighted.

   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
   * After completion of the trouble prediction information history clear, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

<Clear target history item>

Target history
Serial communication retry number history
High density process control error history
Half tone process control error history
Automatic register adjustment error history
Gain adjustment retry history
Paper transport time between sensors



SIMULATION NO.27-10

TROUBLE PRECOGNITION HISTORY CLEAR

ARE YOU SURE?

27-11

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : Used to display the serial communication retry number and the scanner gain adjustment retry number history. (for RSPF)

Section : Communication (RIC/MODEM)

Item : Specification

Operation/Procedure

1) When the machine enters Simulation 27-11, the following screen is displayed.

   * Select the display page of process data with [↓] and [↑] buttons.
   * When there is an item over [↑], the display becomes active and shifts to the previous page.

     When there is no item over [↑], the display grays out and the operation is disabled.

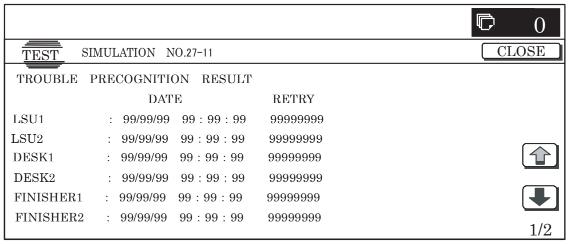
     When there is an item under [↓], the display becomes active and shifts the following page.

     When there is no item under [↓], the display grays out and the operation is disabled.

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of the simulation.
* Press [COLOR]/[BLACK] key to execute copying.

<Display item>

Display item			Content
Item	Occurrence date and time (Display)	Retry number	
LSU1	99/99/99 99:99:99	8 digits	Serial communication retry number history display
LSU2	99/99/99 99:99:99	8 digits	
DESK1	99/99/99 99:99:99	8 digits	
DESK2	99/99/99 99:99:99	8 digits	
FINISHER1	99/99/99 99:99:99	8 digits	
FINISHER2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ1	99/99/99 99:99:99	8 digits	Scanner gain adjustment retry history
SCAN GAIN ADJ2	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ3	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ4	99/99/99 99:99:99	8 digits	
SCAN GAIN ADJ5	99/99/99 99:99:99	8 digits	



SIMULATION NO.27-11

```
TROUBLE  PRECOGNITION  RESULT
                     DATE                  RETRY
LSU1         :  99/99/99  99 : 99 : 99    99999999
LSU2         :  99/99/99  99 : 99 : 99    99999999
DESK1        :  99/99/99  99 : 99 : 99    99999999
DESK2        :  99/99/99  99 : 99 : 99    99999999
FINISHER1    :  99/99/99  99 : 99 : 99    99999999
FINISHER2    :  99/99/99  99 : 99 : 99    99999999
```

27-12

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : Used to display the high-density, half-tone process control error history and the automatic register adjustment error history.

Section : Process

Item : Specifications

Operation/Procedure

1) When the machine enters Simulation 27-12, the following screen is displayed.

   * Select the display page of process data with [↓] and [↑] buttons.
   * When there is an item over [↑], the display becomes active and shifts to the previous page.

     When there is no item over [↑], the display grays out and the operation is disabled.

     When there is an item under [↓], the display becomes active and shifts the following page.

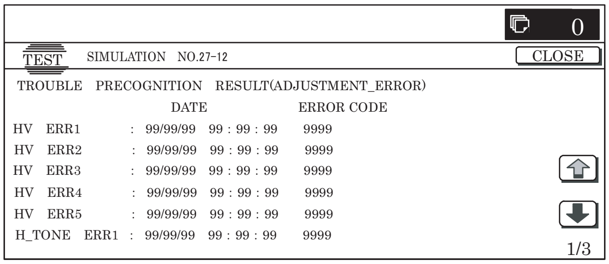
     When there is no item under [↓], the display grays out and the operation is disabled.

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of the simulation.
* Press [COLOR]/[BLACK] key to execute copying.

<Display item and content descriptions>

Display item	Content	Occurrence date and time (Display)	Error code (Digits)
HV_ERR1	High density error history 1	99/99/99 99:99:99	Max. 4 digits
HV_ERR2	High density error history 2	99/99/99 99:99:99	Max. 4 digits
HV_ERR3	High density error history 3	99/99/99 99:99:99	Max. 4 digits
HV_ERR4	High density error history 4	99/99/99 99:99:99	Max. 4 digits
HV_ERR5	High density error history 5	99/99/99 99:99:99	Max. 4 digits
H_TONE ERR1	Half tone error history 1	99/99/99 99:99:99	Max. 4 digits
H_TONE ERR2	Half tone error history 2	99/99/99 99:99:99	Max. 4 digits

Display item	Content	Occurrence date and time (Display)	Error code (Digits)
H_TONE ERR3	Half tone error history 3	99/99/99 99:99:99	Max. 4 digits
H_TONE ERR4	Half tone error history 4	99/99/99 99:99:99	Max. 4 digits
H_TONE ERR5	Half tone error history 5	99/99/99 99:99:99	Max. 4 digits
AUTO REG ADJ1	Automatic register adjustment error history 1	99/99/99 99:99:99	Max. 4 digits
AUTO REG ADJ2	Automatic register adjustment error history 2	99/99/99 99:99:99	Max. 4 digits
AUTO REG ADJ3	Automatic register adjustment error history 3	99/99/99 99:99:99	Max. 4 digits
AUTO REG ADJ4	Automatic register adjustment error history 4	99/99/99 99:99:99	Max. 4 digits
AUTO REG ADJ5	Automatic register adjustment error history 5	99/99/99 99:99:99	4 digits



```
SIMULATION   NO.27-12
TROUBLE   PRECOGNITION   RESULT(ADJUSTMENT_ERROR)
                    DATE                  ERROR CODE
HV   ERR1        :  99/99/99   99 : 99 : 99     9999
HV   ERR2        :  99/99/99   99 : 99 : 99     9999
HV   ERR3        :  99/99/99   99 : 99 : 99     9999
HV   ERR4        :  99/99/99   99 : 99 : 99     9999
HV   ERR5        :  99/99/99   99 : 99 : 99     9999
H_TONE   ERR1    :  99/99/99   99 : 99 : 99     9999
                                                          1/3
```

27-13

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : Used to display the history of paper feed time between sensors.

Section : —

Item : Specifications

Operation/Procedure

1) When the machine enters Simulation 27-13, the following screen is displayed.
   - * Select the display page of process data with [↓] and [↑] buttons.
   - * When there is an item over [↑], the display becomes active and shifts to the previous page.

     When there is no item over [↑], the display grays out and the operation is disabled.

     When there is an item under [↓], the display becomes active and shifts the following page.

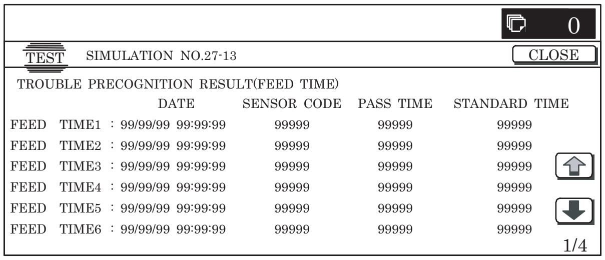
     When there is no item under [↓], the display grays out and the operation is disabled.

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of the simulation.

* Press [COLOR]/[BLACK] key to execute copying.

<Display item and content descriptions>

	Display item	Content	Occurrence date and time	Code between sensors	Passing time	Passing reference time
Main unit	FEED TIME1	History of paper feed time between sensors 1	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2	History of paper feed time between sensors 2	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3	History of paper feed time between sensors 3	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4	History of paper feed time between sensors 4	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5	History of paper feed time between sensors 5	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6	History of paper feed time between sensors 6	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7	History of paper feed time between sensors 7	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8	History of paper feed time between sensors 8	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9	History of paper feed time between sensors 9	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10	History of paper feed time between sensors 10	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
RSPF	FEED TIME1(SPF)	History of SPF paper feed time between sensors 1	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME2(SPF)	History of SPF paper feed time between sensors 2	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME3(SPF)	History of SPF paper feed time between sensors 3	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME4(SPF)	History of SPF paper feed time between sensors 4	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME5(SPF)	History of SPF paper feed time between sensors 5	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME6(SPF)	History of SPF paper feed time between sensors 6	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME7(SPF)	History of SPF paper feed time between sensors 7	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME8(SPF)	History of SPF paper feed time between sensors 8	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME9(SPF)	History of SPF paper feed time between sensors 9	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)
	FEED TIME10(SPF)	History of SPF paper feed time between sensors 10	99/99/99 99:99:99	Max. 5 digits	5 digits (ms)	5 digits (ms)



```
SIMULATION  NO.27-13
TROUBLE  PRECOGNITION  RESULT(FEED  TIME)
                     DATE          SENSOR  CODE    PASS  TIME    STANDARD  TIME
FEED   TIME1  :  99/99/99  99:99:99     99999         99999          99999
FEED   TIME2  :  99/99/99  99:99:99     99999         99999          99999
FEED   TIME3  :  99/99/99  99:99:99     99999         99999          99999
FEED   TIME4  :  99/99/99  99:99:99     99999         99999          99999
FEED   TIME5  :  99/99/99  99:99:99     99999         99999          99999
FEED   TIME6  :  99/99/99  99:99:99     99999         99999          99999
                                                                          1/4
```

27-14

Purpose : Operation test/Check

Function (Purpose) : The FSS connection test mode setting is made.

Section : —

Item : Operation

Operation/Procedure

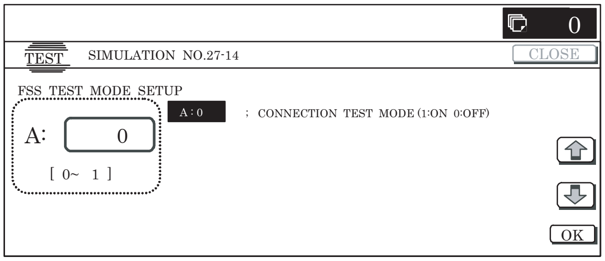
1) When the machine enters Simulation 27-14, following the screen is displayed.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered value.
   - * The FSS connection test mode setting cannot be changed from Enable (1:ON) to Disable (0:OFF).

3) When [OK] button is pressed, and the current set value is saved to EEPROM and RAM.
   - * When [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.
   - * When [CA] key or [SYSTEM SETTINGS] key is pressed to exit the simulation, the machine is rebooted.

<Setting range and default value of each set value>

Item	Display	Content		Setting range	Default
A	CONNECTION TEST MODE (1: ON 0: OFF)	1	Set the FSS connection test mode to Enable.	0 to 1	0 (OFF)
		0	Set the FSS connection test mode to Disable. *		

*: The FSS connection test can be changed only from Disable to Enable, and cannot be changed from Enable to Disable.



FSS TEST MODE SETUP
A : 0 : CONNECTION TEST MODE (1:ON 0:OFF)
A: 0
[0~ 1]

30

30-1

Purpose : Operation test/Check

Function (Purpose) : Used to check the operations of the sensors and detectors in the paper feed section, the paper transport section, and the paper exit section.

Section : Paper feed

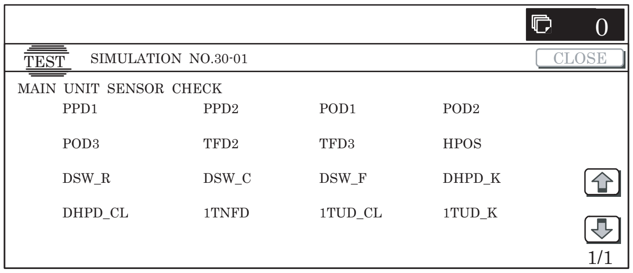
Item : Operation

Operation/Procedure

1) When the machine enters Simulation 30-01, the following screen is displayed to show the sensor status change.
   - * When each sensor is turned ON, the corresponding sensor name is highlighted.

<Sensor name>

Code of sensor	Sensor name
PPD1	Resist front detection
PPD2	Resist detection
POD1	Fusing after detection
POD2	Paper exit detection
POD3	Right tray paper exit detection
TFD2	Main unit paper exit full detection
TFD3	Right tray paper exit full detection
HPOS	Shifter home detection
DSW_R	Right door open/close detection
DSW_C	Cassette 1 transport cover open/close detection
DSW_F	Front cover open/close detection
DHPD_K	K phase detection
DHPD_CL	CL phase detection
1TNFD	Waste toner full detection
1TUD_CL	Primary transfer belt separation CL detection
1TUD_K	Primary belt separation BK detection



SIMULATION NO.30-01
MAIN UNIT SENSOR CHECK
PPD1 PPD2 POD1 POD2
POD3 TFD2 TFD3 HPOS
DSW_R DSW_C DSW_F DHPD_K
DHPD_CL 1TNFD 1TUD_CL 1TUD_K

30-2

Purpose : Operation test/Check

Function (Purpose) : Used to check the operations of the sensors and detectors of the paper feed section and the related circuits.

Section : Paper feed

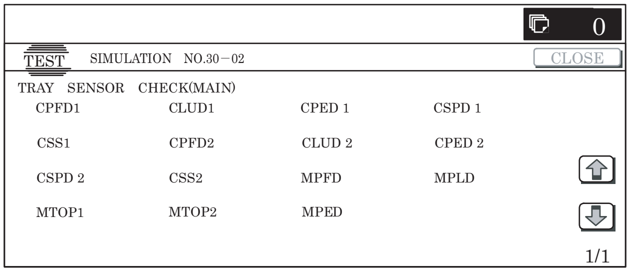
Item : Operation

Operation/Procedure

1) When the machine enters Simulation 30-02, the following screen is displayed to show the sensor status change.
   - * When each sensor is turned ON, the corresponding sensor name is highlighted.

<Sensor name>

Sensor name (Display)	Content
CPFD1	Cassette 1 transport detection
CLUD1	Cassette 1 upper limit detection
CPED1	Cassette 1 paper empty detection
CSPD1	Cassette 1 paper remaining quantity detection
CSS1	Cassette 1 presence detection
CPFD2	Cassette 2 transport detection
CLUD2	Cassette 2 upper limit detection
CPED2	Cassette 2 paper empty detection
CSPD2	Cassette 2 paper remaining quantity detection
CSS2	Cassette 2 presence detection
MPFD	Manual feed paper entry detection
MPLD	Manual feed paper length detection
MTOP1	Manual feed tray reduction detection
MTOP2	Manual feed tray extension detection
MPED	Manual feed paper empty detection



SIMULATION NO.30－02
TRAY SENSOR CHECK(MAIN)
CPFD1 CLUD1 CPED 1 CSPD 1
CSS1 CPFD2 CLUD 2 CPED 2
CSPD 2 CSS2 MPFD MPLD
MTOP1 MTOP2 MPED

33

33-1

Purpose : Operation test/Check

Function (Purpose) : Used to check the operations of the card reader sensor and the related circuits. (The card reader sensor operation can be monitored with the LCD display.) (Japan only)

Section : Other

Item : Operation

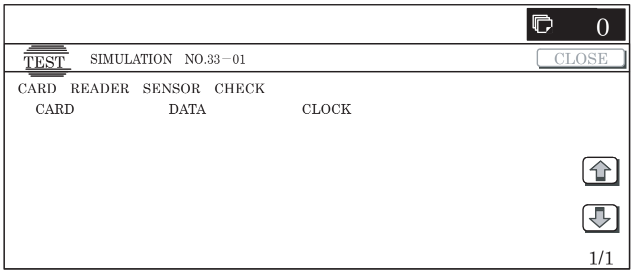
Operation/Procedure

1) When the machine enters Simulation 33-01, the following screen is displayed to show the sensor status change.

* When each sensor is turned ON, the corresponding sensor name is highlighted.

<Sensor name>

Code (Display)	Sensor name
CARD	Card insertion detection
DATA	Card number signal detection
CLOCK	Standard clock signal detection



CARD READER SENSOR CHECK
CARD DATA CLOCK

40

40-2

Purpose : Adjustment

Function (Purpose) : Used to adjust the detection level of the manual feed tray paper width detector.

Section : Paper feed

Item : Operation

Operation/Procedure

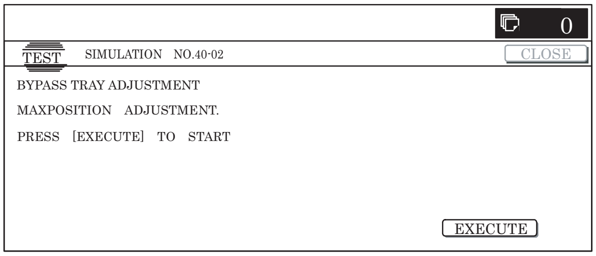
1) Extend the manual feed tray guide to the max. width and press [EXECUTE] button. [EXECUTE] button is highlighted and the current AD value is temporality saved to RAM as the max. width.
   - * During adjustment, "EXECUTING..." is displayed.
   - * After completion of the max. width adjustment, the P1 width (A4) adjustment value start screen is displayed.
2) Extend the manual feed tray guide to the P1 (A4) width position and press [EXECUTE] button. [EXECUTE] button is highlighted and the current AD value is temporality saved to RAM as the P1 width (A4) position. (Hereinafter, the value is saved for each size setting.)
3) Perform the adjustment of P2 position width (A4R) and min. position according to the above procedures.
4) After completion of the adjustment, "COMPLETE" is displayed and the RAM contents are saved to EEPROM. If the adjustment is not completed normally for any reason, "ERROR" is displayed and data are not saved to EEPROM. In this case, the adjustment must be tried again.

<List of set items>

Display	Description of item
MAX POSITION	Manual feed max. width
P1 (A4) POSITION	Manual feed P1 position width (A4)
P2 (A4R) POSITION	Manual feed P2 position width (A4R)
MIN POSITION	Manual feed min. width

<List of result displays>

Item name	Item content
COMPLETE	Adjustment completed
ERROR	Adjustment failed



BYPASS TRAY ADJUSTMENT
MAXPOSITION ADJUSTMENT.
PRESS [EXECUTE] TO START

40-7

Purpose : Setting

Function (Purpose) : Used to set the adjustment value of the detection level of the manual paper feed tray paper width detector.

Section : Paper feed

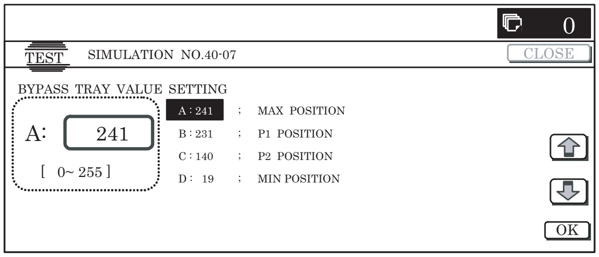
Item : Specifications

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.
   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.
     If there is no item over [↑], the display grays out and the operation is invalid.
     If there is any item under [↓], an active display is made and item is shifted.
     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Item	Item content	Set range	Default value
A	MAX POSITION	Manual feed max. width	0 to 255	241
B	P1 POSITION	Manual feed P1 position (A4)	0 to 255	231
C	P2 POSITION	Manual feed P2 position (A4R)	0 to 255	140
D	MIN POSITION	Manual feed min. width	0 to 255	19



BYPASS TRAY VALUE SETTING
A: 241
[0~ 255]
A : 241 ; MAX POSITION
B : 231 ; P1 POSITION
C : 140 ; P2 POSITION
D : 19 ; MIN POSITION

41

41-1

Purpose : Operation test/Check

Function (Purpose) : Used to display the operating state of the document sensor.

Section : Other

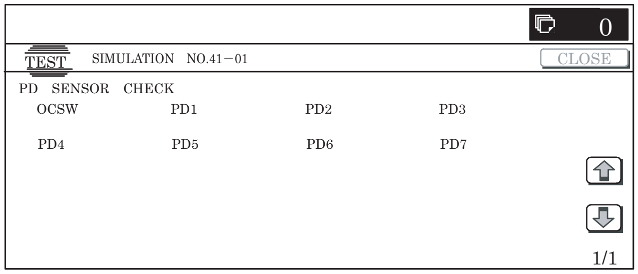
Item : Operation

Operation/Procedure

1) When the machine enters Simulation 41-01, the following screen is displayed to show the sensor status change.
   - * When each sensor is turned ON, the corresponding sensor name is highlighted.

<Sensor name>

Code (Display)	Sensor name
OCSW	Original cover SW
PD1	Document detection 1
PD2	Document detection 2
PD3	Document detection 3
PD4	Document detection 4
PD5	Document detection 5
PD6	Document detection 6
PD7	Document detection 7



SIMULATION NO.41－01

PD SENSOR CHECK

OCSW PD1 PD2 PD3

PD4 PD5 PD6 PD7

41-2

Purpose : Operation test/Check

Function (Purpose) : Used to adjust the detection level of the document size sensor.

Section : Other

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 41-02, the following screen is displayed.

   Press [EXECUTE] button without a document on OC.

   [EXECUTE] button is highlighted and the sensor level setting without document is performed.

2) The sensor level setting without document is completed.

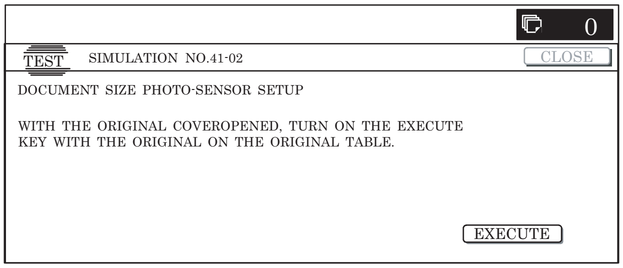
   Set A3 (11" x 17") paper on OC and press [EXECUTE] button.

   The sensor level setting with document detection is performed.

3) After completion of sensor level setting with document, the message is displayed to show the adjustment has been successfully completed. (In case of an error, the error message is displayed with the failed sensor name.)

<Document sensor names, adjustment ranges and default values>

Sensor name	Content	Set range	Default value
PD1	Document sensor 1	0 – 255	128
PD2	Document sensor 2		
PD3	Document sensor 3		
PD4	Document sensor 4		
PD5	Document sensor 5		
PD6	Document sensor 6		
PD7	Document sensor 7		



SIMULATION NO.41-02

DOCUMENT SIZE PHOTO-SENSOR SETUP

WITH THE ORIGINAL COVEROPENED, TURN ON THE EXECUTE KEY WITH THE ORIGINAL ON THE ORIGINAL TABLE.

41-3

Purpose : Operation test/Check

Function (Purpose) : Used to display the document sensor detection level (A/D) in real time and to display the threshold value adjusted with SIM 41-2 in [ ] beside the sensor name.

Section : Other

Item : Operation

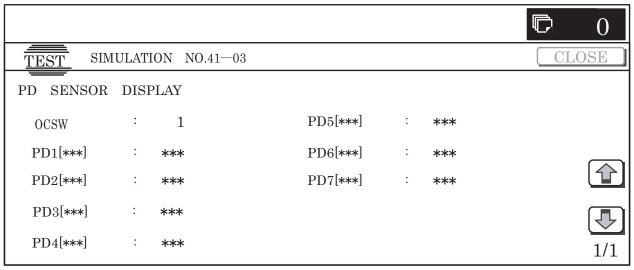
Operation/Procedure

1) When the machine enters Simulation 41-03, the following screen is displayed.
   - * ON/OFF detection of the OCSW sensor and the A/D value check of each PD sensor are performed in real time.

<Display content>

Display	Content	Range
OCSW	Original cover SW	0 – 1 ("1": Close)
PD1	Document detection 1	0 – 255
PD2	Document detection 2	0 – 255
PD3	Document detection 3	0 – 255
PD4	Document detection 4	0 – 255
PD5	Document detection 5	0 – 255
PD6	Document detection 6	0 – 255
PD7	Document detection 7	0 – 255

* In an actual control, the A/D value is sent by polling at a regular interval from the SCU or the controller.



SIMULATION NO.41—03

PD SENSOR DISPLAY

OCSW : 1

PD1[***] : ***

PD2[***] : ***

PD3[***] : ***

PD4[***] : ***

PD5[***] : ***

PD6[***] : ***

PD7[***] : ***

43

43-1

Purpose : Setting

Function (Purpose) : Used to set the fusing temperature in each operation mode.

Section : Fusing

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK] button is pressed, the currently entered data are saved to EEPROM and RAM.

   * When [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current set values is saved in EEPROM and RAM.

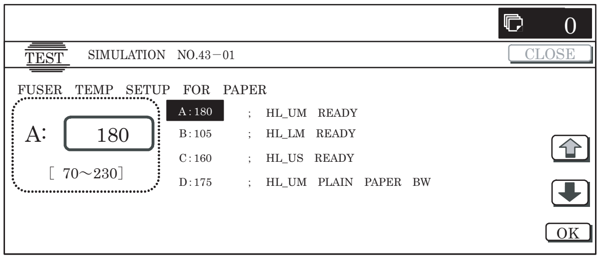
<Fusing temperature setting range and default values>

Item	Display	Content	Set range	Default value	
				Group A *1	Group B *2
A	HL_UM READY	TH_UM set value in READY standby	70 to 230	175	180
B	HL_LM READY	TH_LM set value in READY standby	30 to 200	105	105
C	HL_US READY	TH_US set value in READY standby	70 to 230	155	160
D	HL_UM PLAIN PAPER BW	BW normal paper TH_UM set value	70 to 230	170	175
E	HL_LM PLAIN PAPER BW	BW normal paper TH_LM set value	30 to 200	130	130
F	HL_US PLAIN PAPER BW	BW normal paper TH_US set value	70 to 230	180	180
G	HL_UM PLAIN PAPER CL	COLOR normal paper TH_UM set value	70 to 230	170	175
H	HL_LM PLAIN PAPER CL	COLOR normal paper TH_LM set value	30 to 200	130	130
I	HL_US PLAIN PAPER CL	COLOR normal paper TH_US set value	70 to 230	180	180
J	WARMUP FUMON HL_UM T	Fusing paper front rotation start TH_UM set value	30 to 200	145	145
K	WARMUP FUMOFF HL_LM T	Fusing paper front rotation start TH_LM set value	30 to 200	75	75
L	WARM UP END TIME	WARM UP complete time	30 to 255	76	76
M	HL_UM HEAVY PAPER	Heavy paper TH_UM set value	70 to 230	170	170
N	HL_LM HEAVY PAPER	Heavy paper TH_LM set value	30 to 200	140	140
O	HL_US HEAVY PAPER	Heavy paper TH_US set value	70 to 230	175	175
P	HL_UM OHP PAPER	OHP-TH_UM set value	70 to 230	170	170
Q	HL_LM OHP PAPER	OHP-TH_LM set value	30 to 200	145	145
R	HL_US OHP PAPER	OHP-TH_US set value	70 to 230	170	170
S	HL_UM ENV PAPER	Envelope TH_UM set value	70 to 230	180	180
T	HL_LM ENV PAPER	Envelope TH_LM set value	30 to 200	145	145
U	HL_US ENV PAPER	Envelope TH_US set value	70 to 230	180	180
V	HL_UM E-STAR	TH_UM set value when preheating	30 to 200	145	142
W	TH_US E-STAR	TH_US set value when preheating	30 to 200	130	130
X	PRE-JOB	TH_UM set value when resetting from preheating	30 to 200	160	160

*1: Japan, China, AB_B

*2: U.S.A, Canada, Europe, U.K, Australia, Inch, AB_A

TH_UM	Fusing upper thermister main
TH_LM	Fusing lower thermister main
TH_US	Fusing upper thermister sub
HL_UM	Heater lamp upper main
HL_LM	Heater lamp lower main
HL_US	Heater lamp upper sub



SIMULATION NO.43−01

FUSER TEMP SETUP FOR PAPER

A: 180

[70～230]

A : 180 ; HL_UM READY
B : 105 ; HL_LM READY
C : 160 ; HL_US READY
D : 175 ; HL_UM PLAIN PAPER BW

43-4

Purpose : Setting

Function (Purpose) : Used to set the fusing temperature in each operation mode. (Continued from 43-01.)

Section : Fusing

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK] button is pressed, the currently entered data are saved to EEPROM and RAM.

   When setting is completed, [OK] button returns to the normal display.

* When [↑], [↓], [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

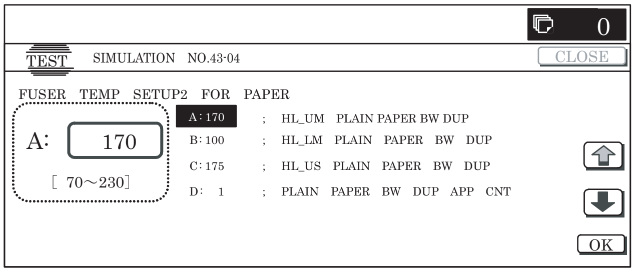
<Fusing temperature setting range and default values>

Item	Display	Content	Set range	Default value	
				Group A *1	Group B *2
A	HL_UM PLAIN PAPER BW DUP	BW plain paper duplex TH_UM set value	70 to 230	170	175
B	HL_LM PLAIN PAPER BW DUP	BW plain paper duplex TH_LM set value	30 to 200	100	100
C	HL_US PLAIN PAPER BW DUP	BW plain paper duplex TH_US set value	70 to 230	175	180
D	PLAIN PAPER BW DUP APP CNT	BW plain paper duplex applicable number of sheets	0 to 60	1	1
E	HL_UM PLAIN PAPER CL DUP	COLOR plain paper duplex TH_UM set value	70 to 230	170	175
F	HL_LM PLAIN PAPER CL DUP	COLOR plain paper duplex TH_LM set value	30 to 200	100	100
G	HL_US PLAIN PAPER CL DUP	COLOR plain paper duplex TH_US set value	70 to 230	175	180
H	PLAIN PAPER CL DUP APP CNT	COLOR plain paper duplex applicable number of sheets	0 to 60	1	1

*1: Japan, China, AB-B

*2: U.S.A, Canada, Europe, U.K, Australia, Inch, AB_A

TH_UM	Fusing upper thermister main
TH_LM	Fusing lower thermister main
TH_US	Fusing upper thermister sub
HL_UM	Heater lamp upper main
HL_LM	Heater lamp lower main
HL_US	Heater lamp upper sub



SIMULATION NO.43-04

FUSER TEMP SETUP2 FOR PAPER

A: 170

[70～230]

A : 170 ; HL_UM PLAIN PAPER BW DUP

B : 100 ; HL_LM PLAIN PAPER BW DUP

C : 175 ; HL_US PLAIN PAPER BW DUP

D : 1 ; PLAIN PAPER BW DUP APP CNT

43-20

Purpose : Setting

Function (Purpose) : Used to correct the environments of low temperature and low humidity (L/L) for the fusing temperature setting 1 for each paper (SIM 43-01).

Section : Fusing

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 43-20, the screen on the right is displayed. (The current set value is displayed.)

2) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

4) When [OK] button is pressed, the currently entered data are saved to EEPROM and RAM.

   * When [↑], [↓], [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

* Input value: The intercept for the correction value is 50. This is because the set value is kept as a positive number in case of a negative setting due to negative correction.

- Correction value: (–49 to +49) Input value: Actually entered value (1 to 99)

Correction value	–49	–25	–5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

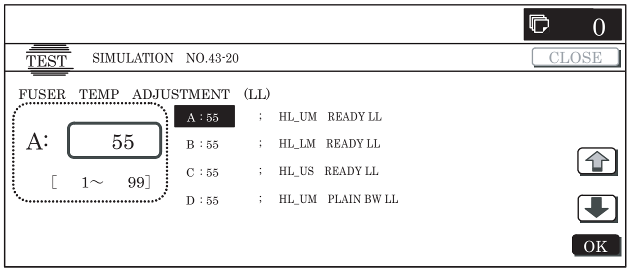
<List of setting parameters>

Item	Display item	Item content	Set range	Default value
A	HL_UM READY LL	Correction value for TH_UM set value in Ready standby under LL environment	1 to 99	55
B	HL_LM READY LL	Correction value for TH_LM set value in Ready standby under LL environment	1 to 99	55
C	HL_US READY LL	Correction value for TH_US set value in Ready standby under LL environment	1 to 99	55
D	HL_UM PLAIN BW LL	Correction value for BW plain paper TH_UM set value under LL environment	1 to 99	55
E	HL_LM PLAIN BW LL	Correction value for BW plain paper TH_LM set value under LL environment	1 to 99	55
F	HL_US PLAIN BW LL	Correction value for BW plain paper TH_US set value under LL environment	1 to 99	55
G	HL_UM PLAIN CL LL	Correction value for COLOR plain paper TH_UM set value under LL environment	1 to 99	55
H	HL_LM PLAIN CL LL	Correction value for COLOR plain paper TH_LM set value under LL environment	1 to 99	55
I	HL_US PLAIN CL LL	Correction value for COLOR plain paper TH_US set value under LL environment	1 to 99	55
J	WARMUP FUMON HL_UM T LL	Correction value for fusing motor front rotation start TH_UM set value under LL environment	1 to 99	60
K	WARMUP FUMOFF HL_LM T LL	Correction value for fusing motor front rotation start TH_LM set value under LL environment	1 to 99	55
L	WARMUP END TIME LL	Correction value for WARMUP complete time under LL environment	1 to 99	80
M	HL_UM HEAVY LL	Correction value for heavy paper TH_UM set value under LL environment	1 to 99	60
N	HL_LM HEAVY LL	Correction value for heavy paper TH_LM set value under LL environment	1 to 99	60

Item	Display item	Item content	Set range	Default value
O	HL_US HEAVY LL	Correction value for heavy paper TH_US set value under LL environment	1 to 99	60
P	HL_UMOHP LL	Correction value for OHP TH_UM set value under LL environment	1 to 99	60
Q	HL_LM OHP LL	Correction value for OHP TH_LM set value under LL environment	1 to 99	60
R	HL_US OHP LL	Correction value for OHP TH_US set value under LL environment	1 to 99	60
S	HL_UM ENVELOPE LL	Correction value for ENVELOPE TH_UM set value under LL environment	1 to 99	60
T	HL_LM ENVELOPE LL	Correction value for ENVELOPE TH_LM set value under LL environment	1 to 99	60
U	HL_US ENVELOPE LL	Correction value for ENVELOPE TH_US set value under LL environment	1 to 99	60
V	HL_UM E-STAR LL	Correction value for preheating TH_UM set value under LL environment	1 to 99	60
W	HL_US E-STAR LL	Correction value for preheating TH_US set value under LL environment	1 to 99	60
X	PRE-JOB LL	Correction value for TH_UM set value when resetting from preheating under LL environment	1 to 99	60

<Code descriptions in the above list>

TH_UM	Fusing upper thermister main
TH_LM	Fusing lower thermister main
TH_US	Fusing upper thermister sub
HL_UM	Heater lamp upper main
HL_LM	Heater lamp lower main
HL_US	Heater lamp upper sub



SIMULATION NO.43-20

FUSER TEMP ADJUSTMENT (LL)

A: 55

[1～ 99]

A : 55 ; HL_UM READY LL
B : 55 ; HL_LM READY LL
C : 55 ; HL_US READY LL
D : 55 ; HL_UM PLAIN BW LL

43-21

Purpose : Setting

Function (Purpose) : Used to perform correction of high temperature and high humidity (H/H) environment for the fusing temperature setting 1 (SIM 43-01) for each paper.

Section : Fusing

Item : Operation

Operation/Procedure

1) When the machine enters SIM 43-21, the following screen is displayed. (The current set value is displayed.)

2) Select the set item with [↑] and [↓] buttons.

The highlighted section of the set value is switched and displayed on the set setting area.

* If there is any item over [↑], an active display is made and item is shifted.

If there is no item over [↑], the display grays out and the operation is invalid.

If there is any item under [↓], an active display is made and item is shifted.

If there is no item over [↓], the display grays out and the operation is invalid.

3) Enter the set value with 10-key.

* Press [C] key to clear the entered values.

4) When [OK] button is pressed, the currently entered data are saved to EEPROM and RAM.

* When [↑], [↓], [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

* Input value: The intercept for the correction value is 50. This is because the set value is kept as a positive number in case of a negative setting due to negative correction.

- Set value: Value to be set (–49 to +49), Input value: Actual input (1 to 99)

Set value	–49	–25	–5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

<List of setting parameters>

Item	Item display	Content of item	Set range	Default value
A	HL_UM READY HH	Correction value for TH_UM set value in READY standby under HH environment	1 to 99	45
B	HL_LM READY HH	Correction value for TH_LM set value in READY standby under HH environment	1 to 99	45
C	HL_US READY HH	Correction value for TH_US set value in READY standby under HH environment	1 to 99	45
D	HL_UM PLAIN BW HH	Correction value for BW plain paper TH_UM set value under HH environment	1 to 99	45
E	HL_LM PLAIN BW HH	Correction value for BW plain paper TH_LM set value under HH environment	1 to 99	45
F	HL_US PLAIN BW HH	Correction value for BW plain paper TH_US set value under HH environment	1 to 99	45
G	HL_UM PLAIN CL HH	Correction value for COLOR plain paper TH_UM set value under HH environment	1 to 99	45
H	HL_LM PLAIN CL HH	Correction value for COLOR plain paper TH_LM set value under HH environment	1 to 99	45
I	HL_US PLAIN CL HH	Correction value for COLOR plain paper TH_US set value under HH environment	1 to 99	45
J	WARMUP FUMON HL_UM T HH	Correction value for fusing motor front rotation start TH_UM set value under HH environment	1 to 99	50
K	WARMUP FUMOFF HL_LM T HH	Correction value for fusing motor front rotation end TH_UM set value under HH environment	1 to 99	50

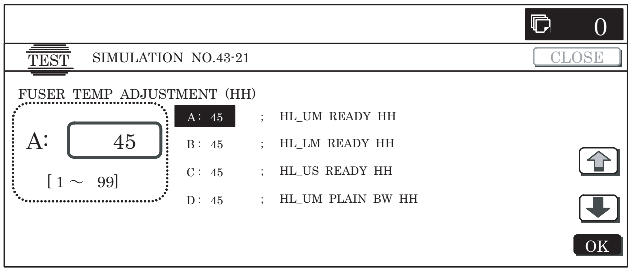
Item	Item display	Content of item	Set range	Default value
L	WARMUP END TIME HH	Correction value for WARMUP end time under HH environment	1 to 99	50
M	HL_UM HEAVY HH	Correction value for heavy paper TH_UM set value under HH environment	1 to 99	50
N	HL_LM HEAVY HH	Correction value for heavy paper TH_LM set value under HH environment	1 to 99	50
O	HL_US HEAVY HH	Correction value for heavy paper TH_US set value under HH environment	1 to 99	50
P	HL_UM OHP HH	Correction value for OHP TH_UM set value under HH environment	1 to 99	50
Q	HL_LM OHP HH	Correction value for OHP TH_LM set value under HH environment	1 to 99	50
R	HL_US OHP HH	Correction value for OHP TH_US set value under HH environment	1 to 99	50
S	HL_UM ENVELOPE HH	Correction value for ENVELOPE TH_UM set value under HH environment	1 to 99	50
T	HL_LM ENVELOPE HH	Correction value for ENVELOPE TH_LM set value under HH environment	1 to 99	50
U	HL_US ENVELOPE HH	Correction value for ENVELOPE TH_US set value under HH environment	1 to 99	50
V	E-STAR HH	Correction value for preheating TH_UM set value under HH environment	1 to 99	50
W	HL_US E-STAR HH	Correction value for preheating TH_US set value under HH environment		50
X	PRE-JOB HH	Correction value for TH_UM set value when resetting from preheating under HH environment	1 to 99	50

* WARMUP END TIME HH → 1s change by 1 count

The other correction values → 1°C change by 1 count

<Code descriptions in the above list>

TH_UM	Fusing upper thermister main
TH_LM	Fusing lower thermister main
TH_US	Fusing upper thermister sub
HL_UM	Heater lamp upper main
HL_LM	Heater lamp lower main
HL_US	Heater lamp upper sub



SIMULATION NO.43-21

FUSER TEMP ADJUSTMENT (HH)

A: 45

[1 ～ 99]

A : 45 ; HL_UM READY HH
B : 45 ; HL_LM READY HH
C : 45 ; HL_US READY HH
D : 45 ; HL_UM PLAIN BW HH

43-22

Purpose : Setting

Function (Purpose) : Used to perform L/L (low temperature, low humidity) correction for the fusing temperature setting 1 (SIM 43-04) for each paper.

Section : Fusing

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 43-22, the following screen is displayed. (The current set value is displayed.)
2) Select the set item with [↑] and [↑] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.
4) When [OK] button is pressed, the currently entered data are saved to EEPROM and RAM.

* When [↑], [↑], [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

* Input value: The intercept for the correction value is 50. This is because the set value is kept as a positive number in case of a negative setting due to negative correction.

- Set value: Value to be set (–49 to +49)

  Input value: Actual input value (1 to 99)

Set value	–49	–25	–5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

<List of setting parameters>

Item	Display item	Item content	Set range	Default value
A	HL_UM PLAIN BW DUP LL	Correction value for upper TH_UM BW plain paper duplex under LL environment	1 to 99	60
B	HL_LM PLAIN BW DUP LL	Correction value for lower TH_LM BW plain paper duplex under LL environment	1 to 99	60
C	HL_US PLAIN BW DUP LL	Correction value for upper TH_US BW plain paper duplex under LL environment	1 to 99	60
D	PLAIN BW DUP APP CNT LL	Correction value for BW plain paper duplex applicable number of sheets under LL environment	1 to 99	50
E	HL_UM PLAIN CL DUP LL	Correction value for upper TH_UM COLOR plain paper duplex under LL environment	1 to 99	60
F	HL_LM PLAIN CL DUP LL	Correction value for upper TH_LM COLOR plain paper duplex under LL environment	1 to 99	60
G	HL_US PLAIN CL DUP LL	Correction value for upper TH_US COLOR plain paper duplex under LL environment	1 to 99	60

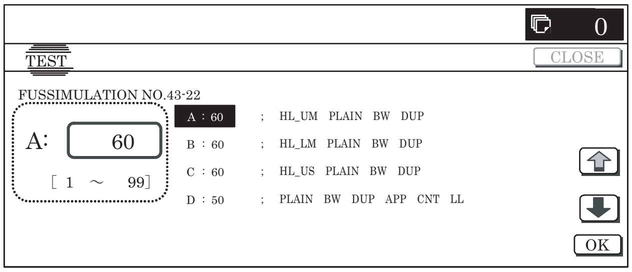
Item	Display item	Item content	Set range	Default value
H	PLAIN CL DUP APP CNT LL	Correction value for COLOR plain paper duplex applicable number of sheets under LL environment	1 to 99	50

* PLAIN BW DUPCNT LL, PLAIN CL DUPCNT LL, HEAVY BW DUP APCNT LL, HEAVY CL DUP APCNT LL → 1s change by 1 count

  The other correction values → 1°C change by 1 count

<Code descriptions in the above list>

TH_UM	Fusing upper thermister main
TH_LM	Fusing lower thermister main
TH_US	Fusing upper thermister sub
HL_UM	Heater lamp upper main
HL_LM	Heater lamp lower main
HL_US	Heater lamp upper sub



FUSSIMULATION NO.43-22

A: 60

[1 ～ 99]

A : 60 ; HL_UM PLAIN BW DUP

B : 60 ; HL_LM PLAIN BW DUP

C : 60 ; HL_US PLAIN BW DUP

D : 50 ; PLAIN BW DUP APP CNT LL

43-23

Purpose : Setting

Function (Purpose) : Used to perform H/H (high temperature, high humidity) correction for the fusing temperature setting 1 (SIM 43-04) for each paper.

Section : Fusing

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 43-23, the following screen is displayed. (The current set value is displayed.)
2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.
   * Press [C] key to clear the entered values.
4) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.

* Input value: The intercept for the correction value is 50. This is because the set value is kept as a positive number in case of a negative setting due to negative correction.

- Set value: Value to be set (–49 to +49)

  Input value: Actual input value (1 to 99)

Set value	–49	–25	–5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

<List of setting parameters>

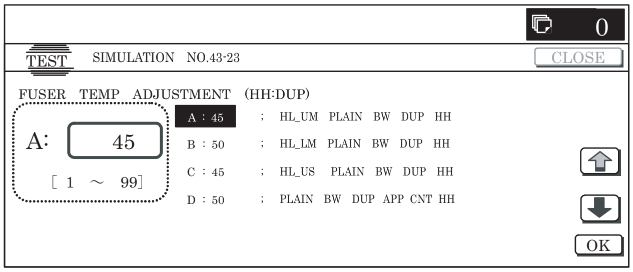
Item	Display item	Item content	Set range	Default value
A	HL_UM PLAIN BW DUP HH	Correction value for TH_UM BW plain paper duplex under HH environment	1 to 99	45
B	HL_LM PLAIN BW DUP HH	Correction value for TH_LM BW plain paper duplex under HH environment	1 to 99	50
C	HL_US PLAIN BW DUP HH	Correction value for TH_US BW plain paper duplex under HH environment	1 to 99	45
D	PLAIN BW DUP APP CNT HH	Correction value for BW plain paper duplex applicable number of sheets under HH environment	1 to 99	50
E	HL_UM PLAIN CL DUP HH	Correction value for TH_UM COLOR plain paper duplex under HH environment	1 to 99	45
F	HL_LM PLAIN CL DUP HH	Correction value for TH_LM COLOR plain paper duplex under HH environment	1 to 99	50
G	HL_US PLAIN CL DUP HH	Correction value for TH_US COLOR plain paper duplex under HH environment	1 to 99	45
H	PLAIN CL DUP APP CNT HH	Correction value for COLOR plain paper duplex applicable number of sheets under HH environment	1 to 99	50

* PLAIN BW DUPCNT HH, PLAIN CL DUPCNT HH, HEABY BW DUP APCNT HH, HEABY CL DUP APCNT HH → 1s change by 1 count

  The other correction values → 1°C change by 1 count

<Code descriptions in the above list>

TH_UM	Fusing upper thermister main
TH_LM	Fusing lower thermister main
TH_US	Fusing upper thermister sub
HL_UM	Heater lamp upper main
HL_LM	Heater lamp lower main
HL_US	Heater lamp upper sub



SIMULATION NO.43-23

FUSER TEMP ADJUSTMENT (HH:DUP)

A: 45

[1 ～ 99]

A : 45 ; HL_UM PLAIN BW DUP HH

B : 50 ; HL_LM PLAIN BW DUP HH

C : 45 ; HL_US PLAIN BW DUP HH

D : 50 ; PLAIN BW DUP APP CNT HH

43-24

Purpose : Setting

Function (Purpose) : Used to enter the correction values for SIM 43-1 and SIM 43-4 temperature corrections.

Section : Fusing

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the entered value is set.

* Input value: The intercept for the correction value is 50. This is because the set value is kept as a positive number in case of a negative setting due to negative correction.

- Set value: Value to be set (–49 to +49)

  Input value: Actual input value (1 to 99)

Set value	–49	–25	–5	0	+5	+25	+49
Input value	1	25	45	50	55	75	99

<Set range and default value of each setup>

Item	Display items	Item descriptions			Set range	Default value
A	NN_120_ WUP_HL_UM & HL_US	WARMUP end temperature correction value	120°C or below when turning on the power under NN environment	Common to items HL_UM, HL_US	1 to 99	50
B	NN_120_WUP_HL_LM			Item HL_LM	1 to 99	50
C	LL_120_WUP_HL_UM & HL_US		120°C or below when turning on the power under LL environment	Common to items HL_UM, HL_US	1 to 99	50
D	LL_120_WUP_HL_LM			Item HL_LM	1 to 99	50
E	HH_120_WUP_HL_UM & HL_US		120°C or below when turning on the power under HH environment	Common to items HL_UM, HL_US	1 to 99	50
F	HH_120_WUP_HL_LM			Item HL_LM	1 to 99	50
G	ON_120_WUP_HL_UM	Temperature correction value immediately after completion of warm-up and during continuation of temperature correction	120°C or below when turning on the power	Item HL_UM	1 to 99	40
H	ON 120 WUP HL_US			Item HL_US	1 to 99	55
I	NN_120_ FUS_DUP_HL_UM & HL_US	Fusing temperature correction value	120°C or below when turning on the power under NN environment	Common to items HL_UM, HL_US	1 to 99	55
J	NN_120_ FUS_DUP_HL_LM			Item HL_LM	1 to 99	50
K	LL_120_ FUS_DUP_HL_UM & HL_US		120°C or below when turning on the power under LL environment	Common to items HL_UM, HL_US	1 to 99	60
L	LL_120_ FUS_DUP_HL_LM			Item HL_LM	1 to 99	50
M	HH_120_ FUS_DUP_HL_UM & HL_US		120°C or below when turning on the power under HH environment	Common to items HL_UM, HL_US	1 to 99	50
N	HH_120_ FUS_DUP_HL_LM			Item HL_LM	1 to 99	50
O	NN_120_ FUS_DUP_CNT	Fusing duplex paper exit count	Under NN environment		1 to 60	5
P	LL_120_ FUS_DUP_CNT		Under LL environment		1 to 60	10
Q	HH_120_ FUS_DUP_CNT		Under HH environment		1 to 60	5
R	COOL_DOWN_HEAVY	Cool-down time	Heavy paper		1 to 60	15
S	COOL_DOWN_OHP		OHP		1 to 60	30
T	COOL_DOWN_DEVELOP		Envelope		1 to 60	40
U	WUP DUP TIME	Temperature correction continuation time immediately after completion of warm-up	-		0 to 255	90

* On adjustment values

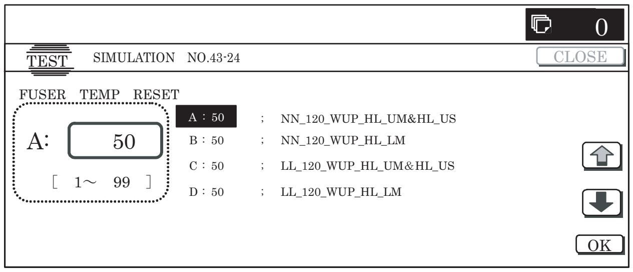
Each temperature correction value → Temperature 1°C change by 1 count

Each paper exit count → 1 sheet by 1 count

Each cool-down time → 1s change by 1 count

<Code descriptions of the above list>

TH_UM	Fusing upper thermister MAIN center
TH_LM	Fusing lower thermister MAIN
TH_US	Fusing upper thermister SUB edge
HL_UM	Heater lamp upper MAIN
HL_LM	Heater lamp lower MAIN
HL_US	Heater lamp upper SUB



A : 50 ; NN_120_WUP_HL_UM&HL_US

B : 50 ; NN_120_WUP_HL_LM

C : 50 ; LL_120_WUP_HL_UM&HL_US

D : 50 ; LL_120_WUP_HL_LM

44

44-1

Purpose : Setting

Function (Purpose) : Used to set whether the correction functions of the image forming (process) section are enabled or not.

Section : —

Item : —

Operation/Procedure

1) When the machine enters Simulation 44-01, the currently set button is highlighted.

   Set the item to be set to the normal display.

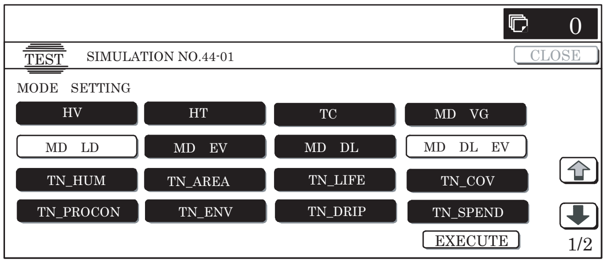
   (Two or more items can be selected.) When an item is selected, its button is highlighted. When the highlighted button is pressed again, it returns to the normal display.

2) When [EXECUTE] button is pressed, the current set value is saved to EEPROM and RAM. After completion of setting, [EXECUTE] button returns to the normal display.

<Set items>

Display	Content	Set range	Default value
HV	Normal operation high-density process control YES/NO setting	Normal (Inhibit: 1: NO) Highlighted (Allow: 0: YES)	Allow
HT	Normal operation half-tone process control YES/NO setting		Allow
TC	Transfer output correction YES/NO setting *1		Allow
MD VG	Membrane decrease grid voltage correction YES/NO setting		Allow
MD LD	Membrane decrease laser power voltage correction YES/NO setting		Inhibit
MD EV	Membrane decrease environment grid voltage correction YES/NO setting		Allow
MD DL	Membrane decrease discharge light quantity correction YES/NO setting		Allow
MD DL EV	Membrane decrease environment discharge light quantity correction YES/NO setting		Inhibit
TN_HUM	Toner density humidity correction YES/NO setting		Allow
TN_AREA	Toner density area correction YES/NO setting		Allow
TN_LIFE	Toner density life correction YES/NO setting		Allow
TN_COV	Toner density print rate correction YES/NO setting		Allow
TN_PROCON	Toner density process control correction YES/NO setting		Allow
TN_ENV	Toner density environment correction YES/NO setting		Allow
TN_DRIP	Toner density correction, unconditional supply YES/NO setting		Allow
TN_SPEND	Toner compulsory consumption mode YES/NO setting		Allow
PHT	1Pixel half-tone process control correction YES/NO setting		Inhibit
AR_AUTO	Auto resist adjustment YES/NO setting	Normal (Inhibit: 1: NO) Highlighted (Allow: 0: YES)	Allow
AR_ERROR	Error check YES/NO setting during auto resist adjustment		Allow
DM_PHASE	Drum phase alignment YES/NO setting		Allow
SENSITIVITY	Toner density correction YES/NO setting		Inhibit
PRT_HT	Half tone process control printer correction feedback Enable/Disable setting		Allow

*1: The transfer efficiency fluctuation is corrected with temperature and humidity (absolute moisture). YES/NO setting. Transfer high output voltage correction.



44-2

Purpose : Adjustment

Function (Purpose) : Used to perform the light quantity adjustment of the process control sensor and the registration sensor (two for resist are adjusted simultaneously) and the surface scan.

Section : Process

Item : Operation

Operation/Procedure

1) When [EXECUTE] button is pressed, it is highlighted and all the drum motors are driven to start the adjustments of the process control sensor and the registration sensor.

   * After completion of the adjustments of the process control sensor and the registration sensor, the drum motors are stopped and the set contents are displayed. The necessary data are saved to EEPROM.

   [EXECUTE] button returns to the normal display.

   * When [EXECUTE] button is pressed during adjustment of the process control sensor and the registration sensor, the monitor is terminated and the drum motor is stopped. [ECECUTE] button returns to the original state.

   Data saving is not performed, but the result at that time is displayed.

   * When an error occurs in the adjustment, "ERROR" is displayed in the value display section at the right of the error item, and the drum motor is stopped. Data saving to EEPROM is not performed at all and the operation is terminated. [EXECUTE] button returns to the original state.

   * When there is a page over [↑], the display becomes active and shifts up to another page. When there is no page over [↑], the display grays out and the operation is disabled.

   * When there is a page under [↓], the display becomes active and shifts down to another page. When there is nor page under [↓], the display grays out and the operation is disabled.

<Operation content>

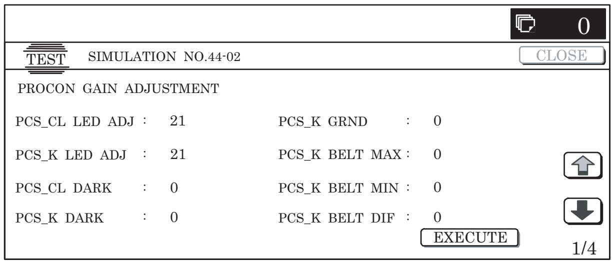
1) Adjust so that the LED light emitting quantity of BK/CL is the target value ± 2.
   - * Target value
     BK: Item B of SIM 44-04
     CL: Item A of SIM 44-13
2) After completion of the adjustment, check the belt surface condition with the BK sensor.

<Set range and default value of each fusing temperature setting>

Classification	Item	Display item	Content	Set range	Default value	Save
PROCON	A	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 to 255	21	YES
	B	PCS_K LED ADJ	Black sensor light emitting quantity adjustment value	1 to 255	21	YES
	C	PCS_CL DARK	Color dark voltage	0 to 255	0	NO
	D	PCS_K DARK	Black dark voltage	0 to 255	0	NO
	E	PCS_K GRND	Belt surface when item B adjustment is completed.	0 to 255	0	NO
	F	PCS_K BELT MAX	Belt surface input max. value	0 to 255	0	NO
	G	PCS_K BELT MIN	Belt surface input min. value	0 to 255	0	NO
	H	PCS_K BELT DIF	Belt surface input difference (Item E – Item F)	0 to 255	0	NO
REGIST	I	REG_F LED ADJ	Registration sensor light emitting quantity adjustment value F	1 to 255	56	YES
	J	REG_R LED ADJ	Registration sensor light emitting quantity adjustment value R	1 to 255	56	YES
	K	REG_F DARK	Registration sensor dark voltage F	0 to 255	0	NO
	L	REG_R DARK	Registration sensor dark voltage R	0 to 255	0	NO
	M	REG_F GRND	Belt surface when completion of Item I adjustment	0 to 255	0	NO
	N	REG_R GRND	Belt surface when completion of Item J adjustment	0 to 256	0	NO
	O	REG_F BELT MAX	Belt surface input max. value (Front side)	0 to 255	0	NO
	P	REG_F BELT MIN	Belt surface input min. value (Front side)	0 to 255	0	NO
	Q	REG_F BELT DIF	Belt surface input difference (Item O – Item P)	0 to 255	0	NO
	R	REG_R BELT MAX	Belt surface input max. value (Rear side)	0 to 255	0	NO
	S	REG_R BELT MIN	Belt surface input min. value (Rear side)	0 to 255	0	NO
	T	REG_R BELT DIF	Belt surface input difference (Item R – Item S)	0 to 255	0	NO
	U	REG_F PATCH (K)	Patch light receiving potential F (K)	0 to 255	0	YES
	V	REG_F PATCH (C)	Patch light receiving potential F (C)	0 to 255	0	YES
REGIST	W	REG_F PATCH (M)	Patch light receiving potential F (M)	0 to 255	0	YES
	X	REG_F PATCH (Y)	Patch light receiving potential F (Y)	0 to 255	0	YES
	Y	REG_R PATCH (K)	Patch light receiving potential R (K)	0 to 255	0	YES
	Z	REG_R PATCH (C)	Patch light receiving potential R (C)	0 to 255	0	YES
	AA	REG_R PATCH (M)	Patch light receiving potential R (M)	0 to 255	0	YES
	AB	REG_R PATCH (Y)	Patch light receiving potential R (Y)	0 to 255	0	YES

<List of errors>

Error name	Error content
Black sensor adjustment error	→ PCS_K LED ADJ error, retry in 3 times, target not reached
Color sensor adjustment error	→ PCS_CL LED ADJ error, retry in 3 times, target not reached
Surface read error	→ PCS_K GRND error, belt 1 lap, outside the range of effective difference between upper and lower values
Registration sensor F adjustment error	→ REG_F LED ADJ error, retry in 3 times, target not reached
Registration sensor R adjustment error	→ REG_R LED ADJ error, retry in 3 times, target not reached
Registration surface F read error	→ REG_F GRND error, belt 1 lap, outside the range of effective difference between upper and lower values
Registration surface R read error	→ REG_R GRND error, belt 1 lap, outside the range of effective difference between upper and lower values



SIMULATION NO.44-02

PROCON GAIN ADJUSTMENT

PCS_CL LED ADJ : 21
PCS_K LED ADJ : 21
PCS_CL DARK : 0
PCS_K DARK : 0
PCS_K GRND : 0
PCS_K BELT MAX : 0
PCS_K BELT MIN : 0
PCS_K BELT DIF : 0

44-4

Purpose : Setting

Function (Purpose) : Used to perform the correction operation of the image forming section and to set the process control sensor adjustment conditions.

Section : Process

Item : Operation

Operation/Procedure

NOTE: Unless a special change is required, set the set values to the default values.

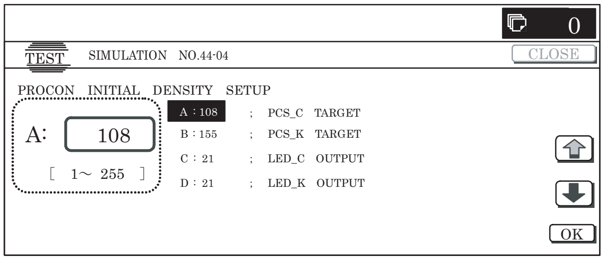
1) Select the set item with [↑] and [↓] buttons.
   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.
     If there is no item over [↑], the display grays out and the operation is invalid.
     If there is any item under [↓], an active display is made and item is shifted.
     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
     When setting is completed, [OK] button returns to the normal display.

3) When [OK] button is pressed, the current set value is saved to EEPROM and RAM.

* When [↑], [↓], [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Display content		Set range	Default value
A	PCS_CL TARGET	Color sensor target set value	1 to 255	108
B	PCS_K TARGET	Black sensor target set value	1 to 255	155
C	LED_CL OUTPUT	Color sensor light emitting quantity set value	1 to 255	21
D	LED_K OUTPUT	Black sensor light emitting quantity set value	1 to 255	21
E	PCS ADJSTMENT LIMIT	Sensor adjustment target limit value	1 to 255	2
F	BELT GROUND DIF	Belt 1 lap, effective difference between upper and lower values	1 to 255	255
G	BIAS_CL STANDARD DIF	Bias (for color) reference calculating difference	0 to 255	0
H	BIAS_BK STANDARD DIF	Bias (for black) reference calculating difference	0 to 255	0
I	BIAS PATCH INTERVAL	Patch bias output interval	1 to 255	60
J	Y_PAT TARGET ID	Patch density standard value (YELLOW)	1 to 255	123
K	M_PAT TARGET ID	Patch density standard value (MAGENTA)	1 to 255	140
L	C_PAT TARGET ID	Patch density standard value (CYAN)	1 to 255	132
M	K_PAT TARGET ID	Patch density standard value (BLACK)	1 to 255	5
N	HV BK_GROUND LIMIT	Patch position surface light receiving effective range	1 to 255	29



SIMULATION NO.44-04

PROCON INITIAL DENSITY SETUP

A: 108

[1～ 255]

A : 108 ; PCS_C TARGET
B : 155 ; PCS_K TARGET
C : 21 ; LED_C OUTPUT
D : 21 ; LED_K OUTPUT

44-6

Purpose : Operation test/Check

Function (Purpose) : Used to forcibly execute the correction in the image process section (high-density process correction) (process correction).

Section : Process

Item : Operation

Operation/Procedure

1) When the machine enters SIM 44-06, the screen shown on the right is displayed.
2) When [EXCECUTE] button is pressed, it is highlighted and all the drum motors are driven to rotate. The high-density process control is started.
3) While the high-density process control is executed, "NOW EXECUTING..." is displayed.
4) After completion of the high-density process control, the drum motors are stopped and [EXECUTE] button returns to the normal display.

When the operation is completed normally, "COMPLETE" is displayed and the execution result is saved to EEPROM and RAM.

In case of an error, "ERROR" is displayed and the details of the error are displayed below.

* When the high-density process control is interrupted by an external factor (pressing [EXECUTE] button), the forcible interruption screen is displayed and the drum motors are stopped. [EXECUTE] button returns to the normal display.

* The result of the high-density process control is displayed with the following simulations:

SIM.44-09 (Process control result display (High density correction))

SIM.44-12 (Process control result display (Half tone correction))

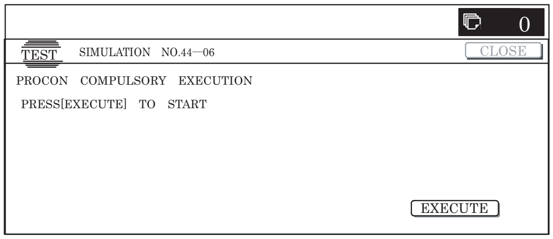
<Result display and content description>

Result display	Content description
COMPLETE	Normal completion
ERROR	Abnormal completion
INTERRUPTION	Forcible interruption

<Detailed error display and content description>

Detailed error display	Content description
CL_SEN_ADJ_ERR	Color sensor adjustment error (*)
BK_ SEN _ADJ_ERR	Black sensor adjustment error (*)
K_HV_ERR	K high density process control error
C_ HV_ERR	C high density process control error
M_ HV_ERR	M high density process control error
Y_ HV _ERR	Y high density process control error
TIMEOUT_ERR	Timeout

* (*) Same as the error in SIM 44-02.



SIMULATION NO.44—06

PROCON COMPULSORY EXECUTION

PRESS[EXECUTE] TO START

44-9

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : Used to check the data related to the result of the image forming section correction (high density process correction). (Corrected main charger grid voltage in each print mode, developing bias voltage, etc.) (This simulation is used to check whether the correction is normally executed or not.)

Section : Process

Item : Data (Machine condition)

Operation/Procedure

1) Change the page with [↑] [↓] buttons.

* If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.

2) Select a mode with the following buttons:

[CPY/PRN] button: Display of each process control mode in the copier/printer.

[OTHER] button: Display of environment area, membrane decrease correction steps and process control execution counter, and model type.

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

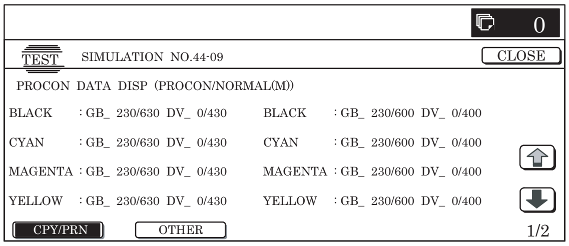
<Display item and content description>

Mode	Page number			Display item (*: correction value)	Content description	Display range	Default value
CPY/PRN	1/2	P (PROCON)	Left	BLACK : GB ***/*** DV ***/***	High density process control GB/DV data (KCMY)	GB: 230 to 850 DV: 0 to 700	GB: 630 DV: 430
				CYAN : GB ***/*** DV ***/***			
				MAGENTA : GB ***/*** DV ***/***			
				YELLOW : GB ***/*** DV ***/***			
		N (M) (NORMAL (MIDDLE))	Right	BLACK : GB ***/*** DV ***/***	High density normal (middle speed display) GB/DV data (KCMY)	GB: 230 to 850 DV: 0 to 700	GB: 630 DV: 430
				CYAN : GB ***/*** DV ***/***			
				MAGENTA : GB ***/*** DV ***/***			
				YELLOW : GB ***/*** DV ***/***			
	2/2	N (L) (NORMAL (LOW))		BLACK : GB ***/*** DV ***/***	High density normal (low speed display) GB/DV data (KCMY)	GB: 230 to 850 DV: 0 to 700	GB: 600 DV: 400
				CYAN : GB ***/*** DV ***/***			
				MAGENTA : GB ***/*** DV ***/***			
				YELLOW : GB ***/*** DV ***/***			
OTHER	1/10	TN/TC	Left	TN HUD AREA	Toner control display humidity area	1 to 14	9
				TN HUD DATA	Toner control display humidity AD value	0 to 1023	0
				TC TMP AREA	Transfer display temperature area	1 to 9	4
				TC TMP DATA	Transfer display temperature AD value	0 to 1023	0
			Right	TC HUD AREA	Transfer display humidity area	1 to 9	4
				TC HUD DATA	Transfer display humidity AD value	0 to 1023	0
				MD HUD AREA	Membrane decrease display humidity area	1 to 14	9
				MD HUD DATA	membrane decrease display humidity AD value	0 to 1023	0
	2/10	DRUM	Left	MD K STEP	Drum membrane decrease correction step display (KCMY)	0 to 4	0
				MD C STEP			
				MD M STEP			
				MD Y STEP			
				MD K DRUM COUNTER	Membrane decrease drum traveling distance area	0 to 20	0
				MD C DRUM COUNTER			
				MD M DRUM COUNTER			
				MD Y DRUM COUNTER			
	3/10	VG		MD K REVISE(VG) : L *** M *** H***	Drum membrane decrease grid voltage correction display (KCMY)	0 to 255	0
				MD C REVISE(VG) : L *** M ***			
				MD M REVISE(VG) : L *** M ***			
				MD Y REVISE(VG) : L *** M ***			
	4/10	LD		MD K REVISE(LD) : L *** M *** H***	Drum membrane decrease laser power voltage correction (KCMY)	0 to 255	0
				MD C REVISE(LD) : L *** M ***			
				MD M REVISE(LD) : L *** M ***			
				MD Y REVISE(LD) : L *** M ***			
	5/10	HV		MD K REVISE(HV) : L *** M *** H***	High density membrane decrease environment GB correction display (KCMY)	0 to 255	0
				MD C REVISE(HV) : L *** M ***			
				MD M REVISE(HV) : L *** M ***			
				MD Y REVISE(HV) : L *** M ***			
	6/10	CP		MD K REVISE(CP) : L *** M *** H***	Drum membrane decrease environment grid voltage correction display (KCMY)	0 to 255	0
				MD C REVISE(CP) : L *** M ***			
				MD M REVISE(CP) : L *** M ***			
				MD Y REVISE(CP) : L *** M ***			
	7/10	DL		MD K REVISE COL (DL): L *** M ***	Drum membrane decrease discharge light quantity correction (%)	0 to 100	50
				MD C REVISE COL (DL): L *** M ***			
				MD M REVISE COL (DL): L *** M ***			
				MD Y REVISE COL (DL): L *** M ***			
	8/10	DL EV		MD K REVISE COL (DL EV): L *** M***	Drum membrane decrease environment discharge light quantity correction (%)	–100 to 100	0
				MD C REVISE COL (DL EV): L *** M***			
				MD M REVISE COL (DL EV): L *** M***			
				MD Y REVISE COL (DL EV): L *** M***			

Mode	Page number			Display item (*: correction value)	Content description	Display range	Default value
OTHER	9/10	CRUM	Left	DESTINATION	Machine side control CRUM destination	Refer to <CRUM destination code list>.	CRUM information
				MODEL TYPE	Machine model type	0 to 1	0
			Right	CRUM DEST_K	CRUM destination	Refer to <CRUM destination code list>.	CRUM information
				CRUM DEST_C			
				CRUM DEST_M			
				CRUM DEST_Y			
	10/10	CNT	Left	PROCON COUNT HV	Number of execution of high density process control	0 to 99999999	0
				PROCON COUNT HT	Number of execution of half tone process control	0 to 99999999	0

<CRUM destination code list>

Display code No.	Destination	Control specification
01	A	AR control
02	B EX Japan	AR control
03	C	AR control
04	B Japan	AR control
05	E	AR control



SIMULATION NO.44-09

PROCON DATA DISP (PROCON/NORMAL(M))

```
BLACK   : GB_ 230/630 DV_ 0/430   BLACK   : GB_ 230/600 DV_ 0/400
CYAN    : GB_ 230/630 DV_ 0/430   CYAN    : GB_ 230/600 DV_ 0/400
MAGENTA : GB_ 230/630 DV_ 0/430   MAGENTA : GB_ 230/600 DV_ 0/400
YELLOW  : GB_ 230/630 DV_ 0/430   YELLOW  : GB_ 230/600 DV_ 0/400
```

44-12

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : Used to check the sampling toner image patch density data in the image forming section correction (high density process correction). (This simulation is used to check whether the correction is normally executed or not.)

Section : Process

Item : Data (Machine condition)

Operation/Procedure

1) Change the page with [↑] [↓] buttons.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.
2) Change the display with the following buttons:

   [TARGET] button: Display of each color target

   [PATCH] button: Display of patch sampling data

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

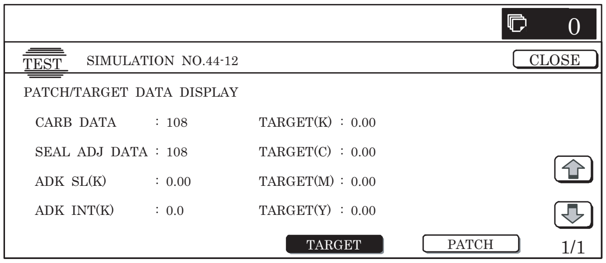
<Display item and content description>

Item	Display item	Content description	Display range	Default value
TARGET (Page 1)	CARB DATA	Calibration plate sensor value	1 to 255	108
	SEAL ADJ DATA	Jig patch seal sensor value	1 to 255	108
	ADK_SL (K)	Developing characteristics gradient coefficient	–9.99 to 9.99	0
	ADK_INT (K)	Developing characteristics intercept coefficient	–999.9 to 999.9	0
	ID(K)	Sensor target value	0.00 to 255.00	0.00
	ID(CMY)	Color sensor target set value	0.00 to 255.00	0.00
PATCH (Page 1 to 5)	N-1	Patch data nth front patch (n = 1 to 10)	0 to 255	0
	N-2	Patch data nth center patch (n = 1 to 10)	0 to 255	0
	N-3	Patch data nth rear patch (n = 1 to 10)	0 to 255	0

* PATCH item: If the patch is converged to the target range in less than 10 times of patch acquisition, "0" is displayed in the other display items.

* When [PATCH] button is pressed, the following page is displayed.

- n = 1 to 2 Page 1
- n = 3 to 4 Page 2
- n = 5 to 6 Page 3
- n = 7 to 8 Page 4
- n = 9 to 10 Page 5



SIMULATION NO.44-12

PATCH/TARGET DATA DISPLAY

```
CARB DATA     : 108     TARGET(K) : 0.00
SEAL ADJ DATA : 108     TARGET(C) : 0.00
ADK SL(K)     : 0.00    TARGET(M) : 0.00
ADK INT(K)    : 0.0     TARGET(Y) : 0.00
```

44-13

Purpose : Adjustment

Function (Purpose) : Color image density sensor adjustment (Adjustment by the jig)

Section : Process

Item : Operation

Operation/Procedure

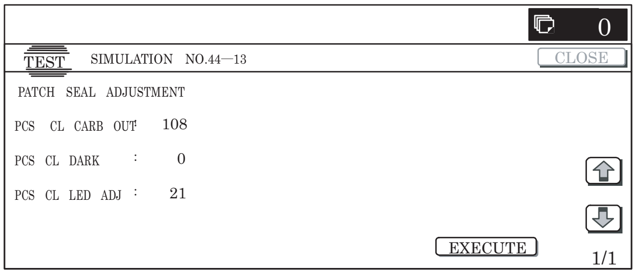
1) When [EXECUTE] button is pressed, it is highlighted, and the color sensor adjustment is started by using the patch seal.
   - * After completion of the color sensor adjustment, [EXECUTE] button returns to the normal display, and the set content is displayed. At that time, the necessary data are saved to EEPROM and RAM.
   - * When [EXECUTE] button is pressed during the sensor adjustment, the sensor adjustment is interrupted and [EXECUTE] button returns to the normal display.
   - * In case of an adjustment error, "ERROR" is displayed in the value display section at the right of the error item. No data are saved to EEPROM, and the operation is terminated. [EXECUTE] button returns to the original state.

<Operation contents>

1) The target value of CL is set and the LED emitting level is adjusted, and the operation is terminated.

<Display item and content description>

Item	Display item	Description	Set range	Default value	Writing
A	PCS_CL CARB OUT	Calibration plate sensor value	1 to 255	108	YES
B	PCS_CL DARK	Color dark voltage	0 to 255	0	NO
C	PCS_CL LED ADJ	Color sensor light emitting quantity adjustment value	1 to 255	21	YES



SIMULATION NO.44—13

PATCH SEAL ADJUSTMENT

PCS CL CARB OUT : 108

PCS CL DARK : 0

PCS CL LED ADJ : 21

44-14

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : Used to check the output level of the fusing temperature sensor, the machine temperature sensor, and the humidity sensor.

Section : Process

Item : Operation

Operation/Procedure

1) The machine enters this simulation, the current data are displayed.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

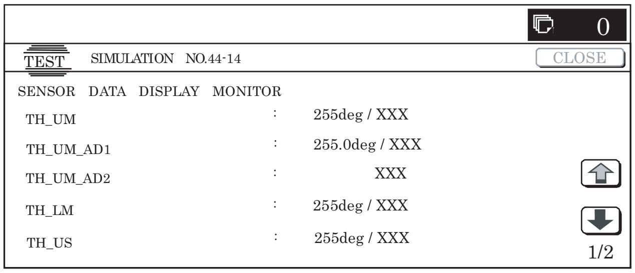
     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.
   - * Data are revised every 5sec.

* For the temperature and humidity only, data outside the range are displayed as "-".

<Display item and description>

Display item	Description	Display range	Default value
TH_UM	Fusing upper thermister main A/D value (Temperature °C/AD value)	Temperature: 0 to 255 °C (±1°C) AD value: 0 to 1023	Sensor value
TH_UM_AD1	Fusing upper thermistor main compensation sensor temperature (°C) AD value (AD value)	Temperature: 0.0 to 255.0 °C (±0.2°C) AD value: 0 to 1023	Sensor value
TH_UM_AD2	Fusing upper thermistor main sensor AD value (AD value)	AD value: 0 to 1023	Sensor value
TH_LM	Fusing lower thermister main A/D value (Temperature °C/AD value)	Temperature: 0 to 255 °C (±1°C) AD value: 0 to 1023	Sensor value
TH_US	Fusing upper thermister sub A/D value (Temperature °C/AD value)	Temperature: 0 to 255 °C (±1°C) AD value: 0 to 1023	Sensor value
TEMPRATURE	Temperature thermister (Temperature/AD value)	Temperature: –40.0 to 60.0°C (±0.1°C) AD value: 0 to 1023	Sensor value
HUMIDITY	Humidity sensor (Humidity/AD value)	Humidity: 5.0 to 90.0% (±0.1%) AD value: 0 to 1023	Sensor value
TH1_LSU	Thermister 1 A/D value (Temperature °C/AD value)	Humidity: 5.0 to 60.0 °C (±0.1°C) AD value: 0 to 255	Sensor value

* The above display range is converted into hexadecimal number to display the AD value.
* When the door open, the power of the sensor would be down, so that the sensor display is treated as outside the range.
* "°C" is displayed as "deg" on the panel because of the display fonts.



SIMULATION NO.44-14

SENSOR DATA DISPLAY MONITOR

TH_UM : 255deg / XXX

TH_UM_AD1 : 255.0deg / XXX

TH_UM_AD2 : XXX

TH_LM : 255deg / XXX

TH_US : 255deg / XXX

44-16

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : Used to check data related to the toner density correction result. (This simulation allows to check that the correction is normally performed or not.)

Section : Process (Developing)

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 44-16, the screen on the right is displayed.

   Specify the color with [K][C][M][Y] buttons. (In this example, [K] is selected.) The data of the selected color are displayed.
   - * Only one color button can be selected. When a color button is selected, it is highlighted. (Black ([K]) is selected in the initial state.)

* Change the page with [↓] or [↑] key.
* If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

  If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.

2) When [NEXT] button is pressed, data of another category are displayed.
   * When [NEXT] button is pressed on the last category data display, the data of the first category are displayed.
   * When [NEXT] button is pressed, the data of the next category are displayed regardless of the display page.
   * When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.
   * Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Display item and content description>

<Toner density> * Common to KCMY

Display item	Item content	Set range	Default value
TONER DEN_LT(M)	Current toner density sensor output value (final value) at middle speed	1 to 255	129
TONER DEN_ST(M)	Current toner density reference value (including all the correction values) at middle speed		128
TONER DEN_LT(L)	Current toner density sensor output value (final value) at low speed		129
TONER DEN_ST(L)	Current toner density reference value (including all the correction values) at low speed		128

<Details of toner density sensor reference value correction>

* Common to KCMY

Display item	Item content	Content description	Set range	Default value
AUTO DEVE (M)	Automatic developer adjustment value (at middle speed)	Sensor output value after execution of SIM 25-02 (at middle speed)	1 to 255	128
ALL(M)	All correction reference value (at middle speed)	Correction reference value (at middle speed) used to calculate all the correction values for auto developer adjustment value		
AUTO DEVE (L)	Automatic developer adjustment value (at low speed)	Sensor output value after execution of SIM 25-02 (at low speed)		
ALL(L)	All correction reference value (at low speed)	Correction reference value (at low speed) used to calculate all the correction values for auto developer adjustment value		
AREA	Area correction value	Correction value for environment area	–127 to 127	0
HUD	Humidity correction value	Correction value for humidity change		
PRINT RATE	Print rate correction value	Correction value for document print rate		
PROCON	Process control correction value	Correction value for high density process control result		
LIFE	Life correction value	Correction value for developer life		
SENSITIVITY	Sensitivity correction value	Correction for toner density sensor sensitivity	1 to 999	500

<Details of toner density sensor control voltage correction>

* Common to KCMY

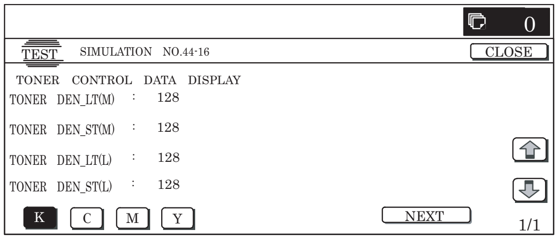
Display item	Item content	Content description	Set range	Default value
AUTO DEVE VO(M)	Automatic developer adjustment control voltage (at middle speed)	Sensor control voltage value (at middle speed) after executing SIM 25-02	1 to 255	128
ALL VO(M)	All correction reference control voltage (at middle speed)	Control voltage reference value (at middle speed) used to calculate all the correction values for auto developer adjustment value		
AUTO DEVE VO(L)	Automatic developer adjustment control voltage (at low speed)	Sensor control voltage value (at low speed) after executing SIM 25-02		
ALL VO(L)	All correction reference control voltage (at low speed)	Control voltage reference value (at low speed) used to calculate all the correction values for auto developer adjustment value		
AREA VO	Area correction control voltage	Control voltage correction value for environment area	–127 to 127	0
HUD VO	Humidity correction control voltage	Control voltage correction value for humidity change		
PRINT RATE VO	Print rate correction control voltage	Control voltage correction value for document print rate		
PROCON VO	Process control correction control voltage	Control voltage correction value for high density process control result		
LIFE VO	Life correction control voltage	Control voltage correction value for developer life		
SENSITIVITY VO	Sensitivity correction control voltage	Control voltage correction value for toner density sensor sensitivity	1 to 999	500
ENV VO	Environment correction control voltage	Control voltage correction value under high temperature environment	–127 to 127	0

* When the correction for the developer counter (life) or the humidity correction is inhibited (OFF) in SIM 44-01, the correction level is displayed as "0."

<Display of current humidity area and that in auto developer adjustment>

* Common to KCMY

Display item	Item content	Content description	Set range	Default value
AUTO DEVE AREA	Auto developer adjustment area	Auto developer adjustment humidity area display	1 to 14	8
AREA	Current area	Current humidity area display		



TONER CONTROL DATA DISPLAY
TONER DEN_LT(M) : 128
TONER DEN_ST(M) : 128
TONER DEN_LT(L) : 128
TONER DEN_ST(L) : 128

44-21

Purpose : Setting

Function (Purpose) : Used to register the half tone process control reference value (half tone correction).

Section : Process

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 44-21, the screen shown on the right is displayed.

   When [EXECUTE] button is pressed, the process control reference value is registered. (When [ECXECUTE] button is pressed during execution, the operation is interrupted.)

2) The display automatically shifts to the first step completion screen or the sensor adjustment error screen.

   When the display shifts to the first step completion screen, the second step is automatically started.

   When the display shifts to the sensor adjustment error screen, press [EXECUTE] button to resume the operation.

   * When the process control is executed second time, "2nd" is displayed.

3) When the second step is completed, the following message is displayed. (The message is automatically proceeds.)

   BLACK: 2ND STEP BLACK END

   CYAN: 2ND STEP CYAN END

   MAGENTA: 2ND STEP MAGENTA END

   YELLOW: 2ND STEP YELLOW END

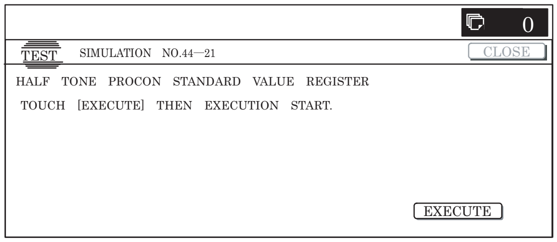
4) The display shifts to the normal completion screen or the error screen automatically.

   When [RESULT] button is pressed, the result screen is displayed.

   * Data of each color are displayed with [K] [C] [M] [Y] buttons.

     Only one color button can be selected. The selected button is highlighted. (Black ([K]) is selected in the initial state.)

   * When [EXECUTE] button is pressed, the process control reference value setting is performed again.



HALF TONE PROCON STANDARD VALUE REGISTER
TOUCH [EXECUTE] THEN EXECUTION START.

44-22

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : Used to check the toner patch image density level of each color in half tone image forming section correction (process correction). (This simulation is used to check that the correction is normally executed or not.)

Section : Process

Item : Data (Machine condition)

Operation/Procedure

1) Change the page with [↑] [↓] buttons.

   * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.

2) Select desired patch sampling data with the following buttons:

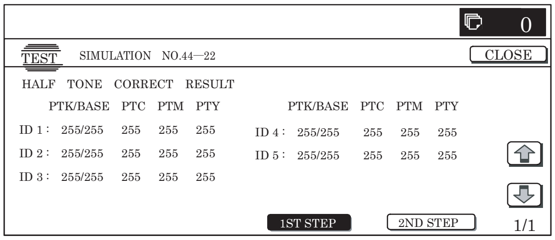
   [1ST STEP] button: [1ST STEP] patch sampling data display

   [2ND STEP] button: [2ND STEP] patch sampling data display

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.
* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Display item and content description>

Button item	Display item	Content description
1ST STEP	ID_n	1ST patch data display (n = 1 to 5)
2ND STEP	ID_n	2ND patch data display (n = 1 to 16)



HALF TONE CORRECT RESULT

	PTK/BASE	PTC	PTM	PTY		PTK/BASE	PTC	PTM	PTY
ID 1 :	255/255	255	255	255	ID 4 :	255/255	255	255	255
ID 2 :	255/255	255	255	255	ID 5 :	255/255	255	255	255
ID 3 :	255/255	255	255	255					

44-24

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : (This simulation is not used in the market.) Used to display the process control result.

Section : Process

Item : Data (Machine condition)

Operation/Procedure

1) Select a color with [K][C][M][Y] buttons. (In this example, [K] is selected.) The data of the selected color are displayed.

   * Only one color button can be selected. The selected button is highlighted. (In the initial screen, black ([K]) is selected.)
   * Change the display page with [↓] or [↑] .
   * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.

2) When [NEXT] button is pressed, data of another category are displayed.

   * When [NEXT] button is pressed on the last category data display, the data of the first category are displayed.

  * When [NEXT] button is pressed, the data of the next category are displayed regardless of the display page.

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.

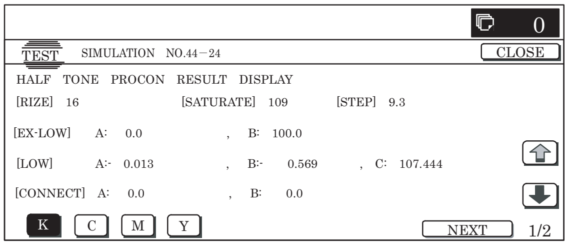
* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Display item and content of each category>

Category	Page number	Display item	Content
Coefficient	1/2	[RIZE]	Low density rising point
		[SATURATE]	High density saturation point
		[STEP]	(Saturation pint – Rising point) / 10
		[EX-LOW]	Coefficient of the approximation formula of lowest density
		[LOW]	Coefficient of the approximation formula of low density
		[CONNECT]	Coefficient of the approximation formula when connecting low density and middle density
	2/2	[MID]	Coefficient of the approximation formula of middle density
		[HIGH]	Coefficient of the approximation formula of high density
		[CONNECT POINT]	Density sections connection output ratio
Reference value	1/1	[SENSOR_TARGET]	Half tone process control reference value
Correction value	1/1	[S_VALUE]	Half tone process control correction amount
For printer	1/3	[PRINTER_S_VALUE]	Printer half tone process control correction value
	2/3	[PRINTER_BASE_DITHER_VALUE]	Printer half tone process control reference dither value
	3/3	[PRINTER_AUTO_HT_VALUE]	Printer auto density adjustment correction value

* When the display item is not executed yet, "——" is displayed. In case of an error, "ERR" is displayed.

* An error display is not made for the reference value and the correction value, and the previous value is displayed.



SIMULATION NO.44－24

HALF TONE PROCON RESULT DISPLAY

[RIZE] 16 [SATURATE] 109 [STEP] 9.3

[EX-LOW] A: 0.0 , B: 100.0

[LOW] A:- 0.013 , B:- 0.569 , C: 107.444

[CONNECT] A: 0.0 , B: 0.0

44-25

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : Used to check the initial condition of process control (half tone correction).

Section : Process

Item : Data (Machine condition)

Operation/Procedure

1) Select a color with [K] [C] [M] [Y] buttons. (In this example, [K] is selected.) The data of the selected color are displayed.
   * Only one color button can be selected. The selected button is highlighted. (In the initial screen, black ([K]) is selected.)
2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   * If there is any item over [↑], an active display is made and item is shifted.

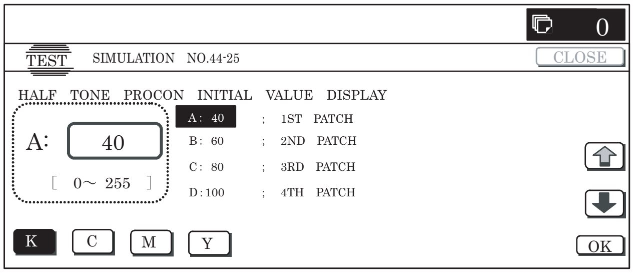
     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.
   * Press [C] key to clear the entered values.
4) When [OK] button is pressed, it is highlighted and the current set data are saved to EEPROM and RAM.
   * Also when [OK], [↑], [↓], [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

<Set range of each set value>

Item	Display	Set range	Content	Default value
A	1ST PATCH	0 to 255	Half tone process control 1ST step 1st patch print gradation	40
B	2ND PATCH	0 to 255	Half tone process control 1ST step 2nd patch print gradation	60
C	3RD PATCH	0 to 255	Half tone process control 1ST step 3rd patch print gradation	80
D	4TH PATCH	0 to 255	Half tone process control 1ST step 4th patch print gradation	100
E	5TH PATCH	0 to 255	Half tone process control 1ST step 5th patch print gradation	255



SIMULATION NO.44-25

HALF TONE PROCON INITIAL VALUE DISPLAY

A: 40

[0～ 255]

A : 40 ; 1ST PATCH

B : 60 ; 2ND PATCH

C : 80 ; 3RD PATCH

D : 100 ; 4TH PATCH

44-26

Purpose : Adjustment

Function (Purpose) : Used to execute the half tone process control forcibly.

Section : Process

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 44-26, the screen on the right is displayed.

   When [EXECUTE] button is pressed, the process control is forcibly executed. (When [EXECUTE] button is pressed during execution, the operation is interrupted.)

2) The display automatically shifts to the first step completion screen or the sensor adjustment error screen.

   When the display shifts to the first step completion screen, the second step is automatically started.

   When the display shifts to the sensor adjustment error screen, press [EXECUTE] button to resume the operation.

3) When the second step is completed, the following message is displayed. (The message is automatically proceeds.)

   BLACK : 2ND STEP BLACK END

   CYAN : 2ND STEP CYAN END

   MAGENTA : 2ND STEP MAGENTA END

   YELLOW : 2ND STEP YELLOW END

4) The display shifts to the normal completion screen or the error screen automatically.

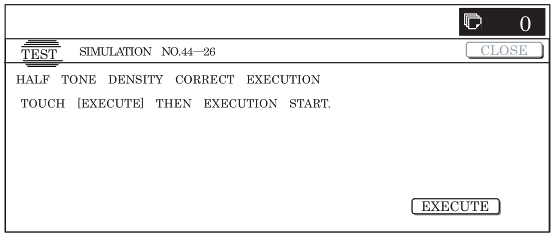
   When [RESULT] button is pressed, the result screen is displayed.

   * Data of each color are displayed with [K][C][M][Y] buttons. Only one color button can be selected. The selected button is highlighted. (In the initial screen, [K] is selected.)

   * When [EXECUTE] button is pressed, the half tone process control correction value setting is resumed.

<Result display and content>

Display	Content
COMPLETE	Normal completion
INTERRUPTION	Forcible interruption
CL_SEN_ADJ_ERR	Color sensor adjustment error
BK_SEN_ADJ_ERR	Black sensor adjustment error
[YMCK]	High density process control [YMCK] error
CONNECTION_ERR	Connection error



HALF TONE DENSITY CORRECT EXECUTION

TOUCH [EXECUTE] THEN EXECUTION START.

44-27

Purpose : Data clear

Function (Purpose) : Used to clear the half tone process control correction value.

Section : Process

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted, and [YES] and [NO] buttons become active display.

2) Press [YES] button.

   The half tone process control correction value is cleared. [YES] button is highlighted.

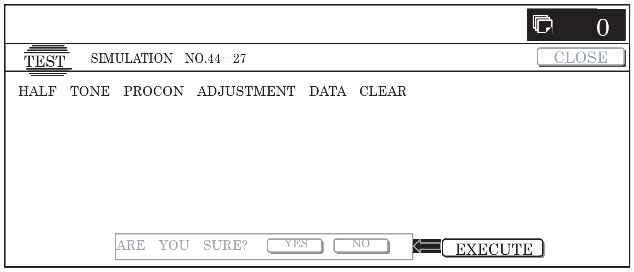
   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

   * After completion of clearing the half tone process control correction value, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

   * The restored data are saved to EEPROM and RAM.

<Standard value restore item>

	Standard value restore item
1 to 15	Half tone process control correction value



HALF TONE PROCON ADJUSTMENT DATA CLEAR

ARE YOU SURE?

44-28

Purpose : Setting

Function (Purpose) : Used to set the timing (ON/OFF) of process control execution.

Section : Process

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.

2) Enter the set value with 10-key.

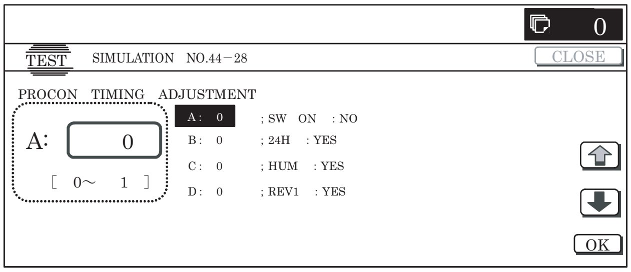
   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current set data are saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Display			Content		Set range		Default value
A	Process control execution YES/NO setting	SW ON	YES	When supplying the power (when canceling sleep.)	Allowed	0 to 1	0	0
			NO		Inhibited		1	
B		24H	YES	When READY (sleep setting) is kept for 24H or more	Allowed	0 to 1	0	0
			NO		Inhibited		1	
C		HUM	YES	The temperature and humidity in the machine are monitored every 2 hours (which can be set with Item I), and they are more than the specified level (more than the set value of item 10) compared with the previous process control.	Allowed	0 to 1	0	0
			NO		Inhibited		1	
D		REV1	YES	When the power is supplied, and when the accumulated traveling distance of BK or M position drum unit reaches a certain level.	Allowed	0 to 1	0	0
			NO		Inhibited		1	
E		REV2	YES	When the accumulated traveling distance of BK or M position drum unit reaches a certain level from the previous density correction.	Allowed	0 to 1	0	0
			NO		Inhibited		1	
F		INITIAL	YES	When warming up after clearing the counter of OPC drum and the developing unit.	Allowed	0 to 1	0	0
			NO		Inhibited		1	
G		PIX	YES	When one of the accumulated toner counts for each colors reaches over the specified count from the previous high density correction.	Allowed	0 to 1	0	1
			NO		Inhibited		1	
H		HUM_LIMIT	YES	The set conditions of item C are added to the set conditions of items A to G.	Allowed	0 to 1	0	1
			NO		Inhibited		1	
I	HUM HOUR			Item C temperature/humidity monitor monitoring time interval setting (H: Hour)		1 to 24		2
J	HUM_DIF			Specified value of area difference compared with that in the previous process control execution of item C		1 to 9		2
K	BK_RATIO			Setting of the zoom ratio (%) of BK position OPC drum traveling distance of item E		1 to 999		20
L	M_RATIO			Setting of the zoom ratio (%) of M position OPC drum traveling distance of item E		1 to 999		20
M	PIX_RATIO			Pitch count zoom ratio setting (%)		1 to 999		100

* A – H display: "Item name: Detail display."
Example: SW ON:YES



SIMULATION NO.44−28

PROCON TIMING ADJUSTMENT

A: 0

[0～ 1]

A: 0 ; SW ON : NO
B: 0 ; 24H : YES
C: 0 ; HUM : YES
D: 0 ; REV1 : YES

44-29

Purpose : Setting

Function (Purpose) : Enable/disable of the half tone correction during each job is switched.

Section : Process

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

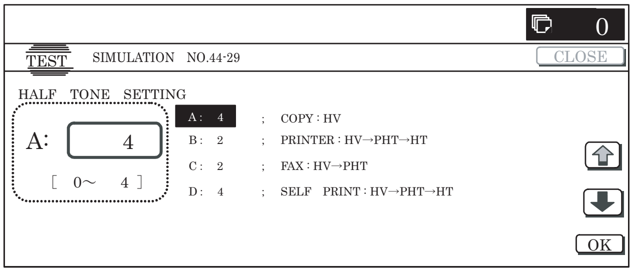
   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, it is highlighted and the current set data are saved to EEPROM and RAM.

<Set item description: JOB kinds>

Item	Display item	Description of item	Set range		Default value
A	COPY	Copier	0 to 4	0: No execution	4
B	PRINTER	Printer		1: HV only	2
C	FAX	FAX		2: HV → PHT	2
D	SELF PRINT	Self print		3: HV → HT	4
				4: HV → PHT → HT	

* The actual display is "Display item: Set range."
Example: COPY:HV → PHT → HT



SIMULATION NO.44-29

HALF TONE SETTING

A: 4

[0～ 4]

A: 4 ; COPY : HV
B: 2 ; PRINTER : HV→PHT→HT
C: 2 ; FAX : HV→PHT
D: 4 ; SELF PRINT : HV→PHT→HT

44-31

Purpose : Adjustment

Function (Purpose) : Used to perform the phase adjustment for OPC drum deflection. (Used to adjust the phases of four OPC drums deflection.)

Section : Process (OPC drum)

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter "3" with 10-key in the print mode of set item A to change the set value. (Default is 3.)

   * Press [C] key to clear the entered values.

3) Set A3 paper in the cassette 1 tray.

4) Use [↓] button to shift to the paper of set item "C" and enter "3" with 10-key. (The default is 3.)

5) When [OK] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM.

   * When [EXECUTE], [↑], [↓], [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

6) Check the output pattern to examine deflections of C, M, Y, and K.

   - The deflection is within 2 lines. → Simulation is completed.
   - The deflection is not within 2 lines. → Go to step 9.

7) Shift to the set item A and enter "1" with 10-key.

8) When [EXECUTE] button is pressed, the drum deflection adjustment pattern is printed. (8 sheets are outputted.)

   * Numbers 1 – 8 are printed sequentially in the output pattern.

9) Check 8 sheets of print patterns to find the print pattern in which the deflection is within2 lines for C, M, and Y. Set the print value of the print pattern to set item B.

10) To check the deflection in the set value, enter "3" to set item A with 10-key, and press [EXECUTE] button to print one sheet of the drum deflection adjustment pattern.

* When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during self print, the operation is interrupted.

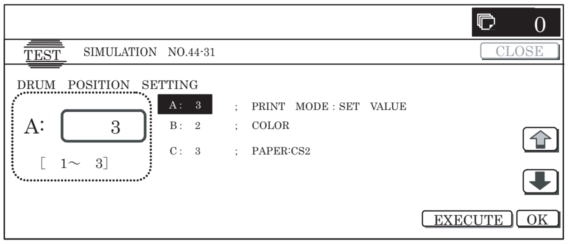
* After completion of self print, [EXECUTE] button returns to the original state.

* For cassette selection, the manual feed cassette is set. (Set item C is 1)

<Set item, set range, and default values>

Item	Display item: Detail of display		Description			Set range		Default value	Writing
A	PRINT MODE	45deg	Print mode	45 degree	Deflection check pattern every 45 degree (8 sheets of print) (1) 0° (2) 45° (3) 90° (4) 135° (5) 180° (6) 225° (7) 270° (8) 315° * The number in ( ) is printed on the output pattern.	1 to 3	1	3 (SET VALUE)	NO
		90deg		90 degree	2: Deflection check pattern for every 90 degree (4 sheets of print) (1) 0° (3) 90° (5) 180° (7) 270° * The number in ( ) is printed on the output pattern.		2		
		SET VALUE		SET VALUE	3: Deflection check print (One sheet of print) at the set value.		3		
B	COLOR		Phase adjustment value BK → CL		Angle step 0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315° (8)	1 to 8		2	YES
C	PAPER	MFT	Cassette selection		Manual feed	1 to 6	1	3 (CS2)	NO
		CS1			Machine 1 stage		2		
		CS2			Machine 2 stage		3		
		CS3			Option paper feed desk 1 stage		4		
		CS4			Option paper feed desk 2 stage		5		
		LCC			LCC		6		

* The display of item A/C is "Display item: Detail of display."
Example: PAPER : CS2



DRUM POSITION SETTING

A: 3

[1～ 3]

A : 3 ; PRINT MODE : SET VALUE

B : 2 ; COLOR

C : 3 ; PAPER:CS2

44-43

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : Used to display each developing unit installing state AD value.
This simulation is added to check the sampling data of the detection judgment of developing unit installation not only as the judgment result (trouble display) but also as the current state value.

Section : Process (Developing)

Item : Data (Machine condition)

Operation/Procedure

1) When the machine enters Simulation 44-43, the data stored in EEPROM are displayed.

* Data are revised every 5sec.

<List of display items>

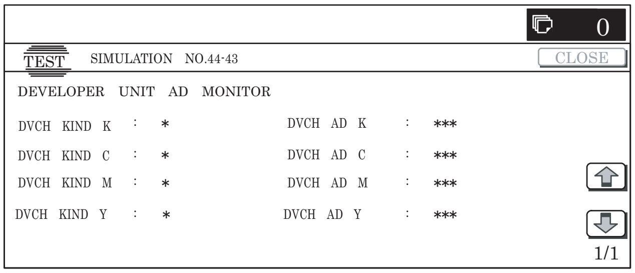
Item	Item name	Item content	Display range	Remark
A	DVCH KIND K	K developing unit kind state	1 to 9 (*)	Developing unit model identification information saved in EEPROM on the machine side. A judgment is made by verifying this information and the model information in CRUM. Since the result (OK or NG) is known when warming up, the error display is not required in SIM. The display is made by the division code of 1 to 9 instead of the model name.
B	DVCH KIND C	C developing unit kind state	1 to 9 (*)	
C	DVCH KIND M	M developing unit kind state	1 to 9 (*)	
D	DVCH KIND Y	Y developing unit kind state	1 to 9 (*)	
E	DVCH_AD_K	K developing unit installation AD value	0 to 255	Actual measurement value of the developing unit output voltage AD value
F	DVCH_AD_C	C developing unit installation AD value	0 to 255	Actual measurement value of the developing unit output voltage AD value
G	DVCH_AD_M	M developing unit installation AD value	0 to 255	Actual measurement value of the developing unit output voltage AD value
H	DVCH_AD_Y	Y developing unit installation AD value	0 to 255	Actual measurement value of the developing unit output voltage AD value

(*): The kind of a developing unit is identified with the ID number.

For ID and the contents of developing unit models, refer to <List of developing unit ID>, below.

<List of developing unit ID>

ID number	Developing unit model name
1	OEM4, etc.
2	PASTEL MFP
3	PASTEL PRT
4	C-JUPITER MFP
5	C-JUPITER PRT
6	OEM1, etc.
7	OEM2, etc.
8	OEM3, etc.
9	No developing unit



```
SIMULATION   NO.44-43

DEVELOPER   UNIT   AD   MONITOR

DVCH  KIND  K   :   *            DVCH  AD  K   :   ***
DVCH  KIND  C   :   *            DVCH  AD  C   :   ***
DVCH  KIND  M   :   *            DVCH  AD  M   :   ***
DVCH  KIND  Y   :   *            DVCH  AD  Y   :   ***
```

44-52

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : (This function is not used. Do not operate.) Used to check the toner patch image density level of each color in 1 pixel half tone correction. (The simulation is used to check whether the correction is normally executed or not.)

Section : Process

Item : Data (Machine condition)

Operation/Procedure

1) Change the page with [↑] [↓] buttons.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

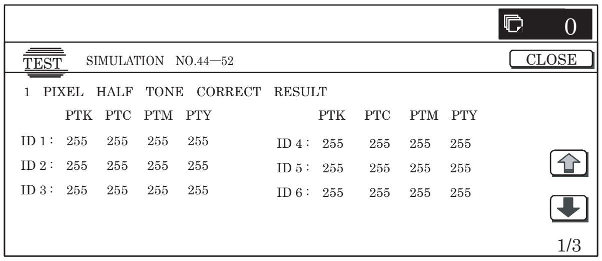
     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Display item and content description>

Display item	Content description	Display range
ID_n	Patch data display (n = 1 to 16)	0 to 255



```
SIMULATION   NO.44—52

1  PIXEL  HALF  TONE  CORRECT  RESULT
        PTK   PTC   PTM   PTY              PTK   PTC   PTM   PTY
ID 1 :  255   255   255   255      ID 4 :  255   255   255   255
ID 2 :  255   255   255   255      ID 5 :  255   255   255   255
ID 3 :  255   255   255   255      ID 6 :  255   255   255   255
```

44-54

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : (This function is not used. Do not operate.) Used to display the 1 pixel half tone correction result.

Section : Process

Item : Data (Machine condition)

Operation/Procedure

1) Select a color with [K][C][M][Y] buttons. (In this example, [K] is selected.) The data of the selected color are displayed.
   - * Only one color button can be selected. The selected button is highlighted. (In the initial screen, black ([K]) is selected.)
   - * Change the display page with [↑] [↓] buttons.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation becomes invalid.
2) When [NEXT] button is pressed, data of another category are displayed.
   - * When [NEXT] button is pressed on the last category data display, the data of the first category are displayed.
   - * When [NEXT] button is pressed, the data of the next category are displayed regardless of the display page.

* When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.

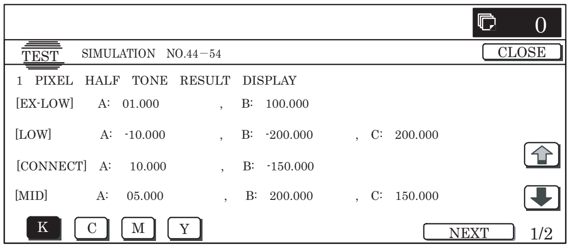
* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Display item and content of each item>

Category	Page number	Display item	Content	Display range
Approximation result	1/2	[EX-LOW]	EXTRA lowest density area approximation formula coefficient	A: –10.000 to +10.000 B: –255.000 to +255.000
		[LOW]	Low density approximation formula coefficient	A: –10.000 to +10.000 B, C:-255.000 to +255.000
		[CONNECT]	Approximation formula coefficient when connecting low density and middle density	A: –10.000 to +10.000 B: –255.000 to +255.000
		[MID]	Middle density approximation formula coefficient	A: –10.000 to +10.000 B, C: –255.000 to +255.000
	2/2	[HIGH]	High density approximation formula coefficient	A: –10.000 to +10.000 B: –255.000 to +255.000
		[CONNECT SENSOR]	Sensor output at connecting point of each density area	#1 to #4: 0 to 255
Reference register value	1/1	[SENSOR_TARGET]	Reference value registration value of each color and each point of 1 pixel half tone correction	#1 to #15
Correction value	1/1	[S_VALUE]	Correction value of each color and each point of 1 pixel half tone correction	#1 to #15

* When the display item is not executed yet, "——" is displayed. In case of an error, "ERR" is displayed.

* An error display is not made for the reference value and the correction value, and the previous value is displayed.



SIMULATION NO.44–54

1 PIXEL HALF TONE RESULT DISPLAY

[EX-LOW] A: 01.000 , B: 100.000

[LOW] A: -10.000 , B: -200.000 , C: 200.000

[CONNECT] A: 10.000 , B: -150.000

[MID] A: 05.000 , B: 200.000 , C: 150.000

1/2

44-56

Purpose : Setting

Function (Purpose) : (This function is not used. Do not operate.) Used to perform the forcible execution of 1 pixel half tone correction.

Section : Process

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 44-56, the following screen is displayed.

   When [EXECUTE] button is pressed, the forcible execution of 1 pixel process control is started. (When [EXECUTE] button is pressed during execution, the operation is interrupted.)

   * In case of a sensor adjustment error, press [EXECUTE] button to resume the operation.

2) The display shifts to the normal completion screen or the error screen automatically.

   When [RESULT] button is pressed, the result screen is displayed.

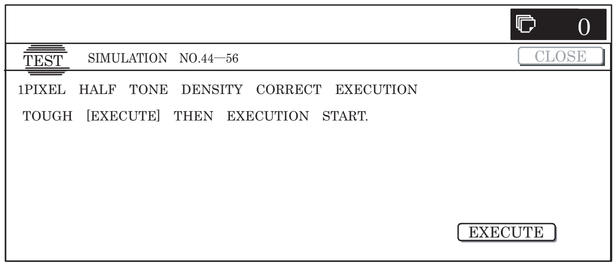
   * Select a color with [K] [C] [M] [Y] buttons. The data of the selected color are displayed.

   Only one color button can be selected. The selected button is highlighted. (In the initial screen, black ([K]) is selected.)

   * When [EXECUTE] button is pressed, the 1 pixel process control correction value setting is performed again.

<Result display and content description>

Display	Content
COMPLETE	Normal completion
INTERRUPTION	Forcible interruption
CL_SEN_ADJ_ERR	Color sensor adjustment error
BK_SEN_ADJ_ERR	Black sensor adjustment error
[YMCK]	High density process control [YMCK] error
CONNECTION_ERR	Connection error



SIMULATION NO.44–56

1PIXEL HALF TONE DENSITY CORRECT EXECUTION

TOUGH [EXECUTE] THEN EXECUTION START.

44-57

Purpose : Data clear

Function (Purpose) : (This function is not used. Do not operate.) Used to clear the correction value of 1 pixel half tone correction.

Section : Process

Item : Data clear

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted, and [YES] and [NO] buttons becomes active display.

2) Press [YES] button.

   * The half tone correction value is cleared. [YES] button is highlighted.

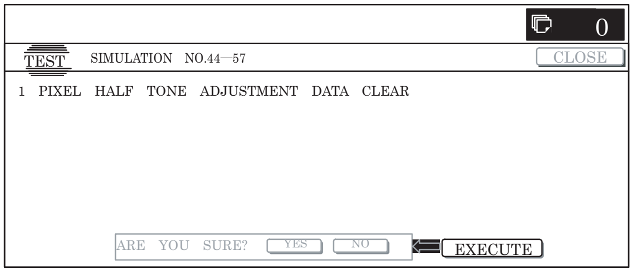
   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

   * After completion of clearing the half tone correction value, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

   * The cleared data are saved to EEPROM and RAM.

<Half tone correction value clear item>

	Half tone correction value clear item
1 to 15	Process control half tone correction value



SIMULATION NO.44–57

1 PIXEL HALF TONE ADJUSTMENT DATA CLEAR

ARE YOU SURE?

46

46-1

Purpose : Adjustment

Function (Purpose) : Used to set the default exposure (color copy) for every document mode.

Section : Scanner

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.
   * The set values can be collectively changed by pressing [▽] [△] buttons.

     When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.

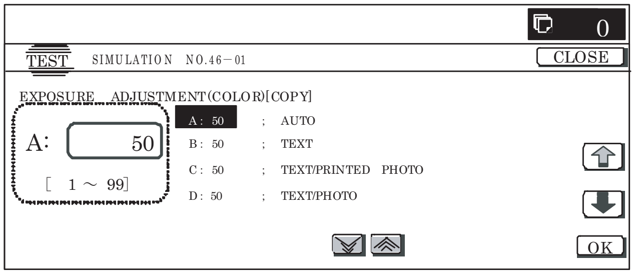
3) When [OK] button is pressed, the currently entered data are saved to EEPROM and RAM.

   * When [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.
* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display	Description	Set range	Default value
A	AUTO	Auto	1 to 99	50
B	TEXT	Text	1 to 99	50
C	TEXT/PRINTED PHOTO	Text/Printed Photo	1 to 99	50
D	TEXT/PHOTO	Text/Photo	1 to 99	50
E	PRINTED PHOTO	Printed photo	1 to 99	50
F	PHOTOGRAPH	Photograph	1 to 99	50
G	MAP	Map	1 to 99	50
H	LIGHT	Light density document	1 to 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	1 to 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Print (Copy document)	1 to 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed photo (Coy document)	1 to 99	50
L	TEXT (COLOR TONE ENHANCEMENT)	Text (Color tone enhancement)	1 to 99	50
M	TEXT/PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Text/Print (Color tone enhancement)	1 to 99	50
N	TEXT/PHOTO (COLOR TONE ENHANCEMENT)	Text/Photograph (Color tone enhancement)	1 to 99	50
O	PRINTED PHOTO (COLOR TONE ENHANCEMENT)	Printed Photo (Color enhancement)	1 to 99	50
P	PHOTOGRAPH (COLOR TONE ENHANCEMENT)	Photograph(Color tone enhancement)	1 to 99	50
Q	MAP (COLOR TONE ENHANCEMENT)	Map (Color tone enhancement)	1 to 99	50
R	SINGLE COLOR	Single color	1 to 99	50
S	SINGLE COLOR (COPY TO COPY)	Single color (Copy document)	1 to 99	50
T	TWO COLOR	2-color (red/black) copy	1 to 99	50
U	TWO COLOR (COPY TO COPY)	2-color (red/black) copy (Copy document)	1 to 99	50



SIMULATION NO.46−01

EXPOSURE ADJUSTMENT(COLOR)[COPY]

A: 50

[1 ～ 99]

A : 50 ; AUTO
B : 50 ; TEXT
C : 50 ; TEXT/PRINTED PHOTO
D : 50 ; TEXT/PHOTO

46-2

Purpose : Adjustment

Function (Purpose) : Used to adjust the exposure in BLACK copy.

Section : Scanner

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.
   * The set values can be collectively changed by pressing [▽] [△] buttons.

     When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.

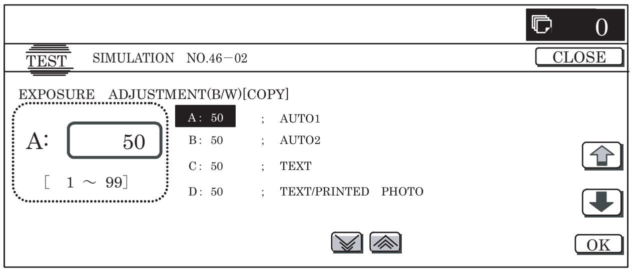
3) When [OK], [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.
* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	AUTO1	Auto1	1 to 99	50
B	AUTO2	Auto2	1 to 99	50
C	TEXT	Text	1 to 99	50
D	TEXT/PRINTED PHOTO	Text/Printed Photo	1 to 99	50
E	TEXT/PHOTO	Text/Photo	1 to 99	50
F	PRINTED PHOTO	Printed Photo	1 to 99	50

Item	Display	Content	Set range	Default value
G	PHOTOGRAPH	Photograph	1 to 99	50
H	MAP	Map	1 to 99	50
I	TEXT (COPY TO COPY)	Text (Copy document)	1 to 99	50
J	TEXT/PRINTED PHOTO (COPY TO COPY)	Text/Printed Photo (Copy document)	1 to 99	50
K	PRINTED PHOTO (COPY TO COPY)	Printed Photo (Copy document)	1 to 99	50
L	LIGHT	Light density document	1 to 99	50



SIMULATION NO.46−02

EXPOSURE ADJUSTMENT(B/W)[COPY]

A: 50

[1 ～ 99]

A: 50 ; AUTO1
B: 50 ; AUTO2
C: 50 ; TEXT
D: 50 ; TEXT/PRINTED PHOTO

46-4

Purpose : Adjustment

Function (Purpose) : Used to adjust the exposure of the color scanner.

Section : Scanner

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

   * The set values can be collectively changed by pressing [▽] [△] buttons.

   When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.

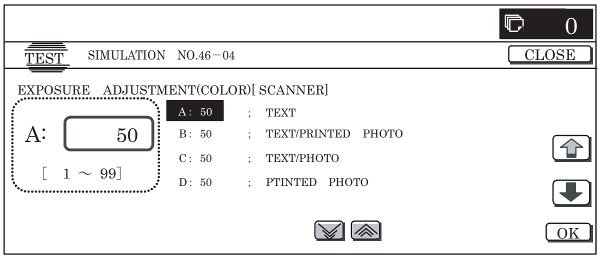
3) When [OK], [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	TEXT	Text	1 to 99	50
B	TEXT/PRINTED PHOTO	Text/Printed Photo	1 to 99	50
C	TEXT/PHOTO	Text/Photo	1 to 99	50
D	PRINTED PHOTO	Printed Photo	1 to 99	50
E	PHOTOGRAPH	Photograph	1 to 99	50
F	MAP	Map	1 to 99	50



SIMULATION NO.46−04

EXPOSURE ADJUSTMENT(COLOR)[SCANNER]

A: 50

[1 ～ 99]

A: 50 ; TEXT
B: 50 ; TEXT/PRINTED PHOTO
C: 50 ; TEXT/PHOTO
D: 50 ; PTINTED PHOTO

46-5

Purpose : Adjustment

Function (Purpose) : Used to adjust the exposure of the black scanner.

Section : Scanner

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

   * The set values can be collectively changed by pressing [▽] [△] buttons.

   When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.

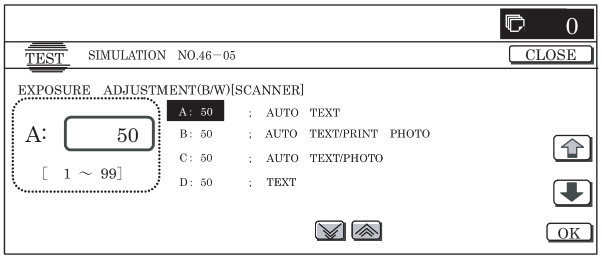
3) When [OK], [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	AUTO TEXT	Auto text	1 to 99	50
B	AUTO TEXT/PRINT PHOTO	Auto text/Print Photo	1 to 99	50
C	AUTO TEXT/PHOTO	Auto text/Photo	1 to 99	50
D	TEXT	TExt	1 to 99	50
E	TEXT/PRINT PHOTO	Text/Print Photo	1 to 99	50
F	TEXT/PHOTO	Text/Photo	1 to 99	50
G	PRINTED PHOTO	Printed Photo	1 to 99	50
H	PHOTOGRAPH	Photograph	1 to 99	50
I	MAP	Map	1 to 99	50



SIMULATION NO.46−05

EXPOSURE ADJUSTMENT(B/W)[SCANNER]

A: 50

[1 ～ 99]

A: 50 ; AUTO TEXT
B: 50 ; AUTO TEXT/PRINT PHOTO
C: 50 ; AUTO TEXT/PHOTO
D: 50 ; TEXT

46-8

Purpose : Adjustment

Function (Purpose) : Used to make the scanner color balance RGB adjustment (for color push scanner mode).

Section : Scanner

Item : Adjustment

Operation/Procedure

1) Select a desired color with [B] [G] [R] buttons. (In this example, [B] is selected.) The data of the selected color are displayed.
   - * Only one color button can be selected. The selected button is highlighted. (Blue is selected in the initial screen.)
2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

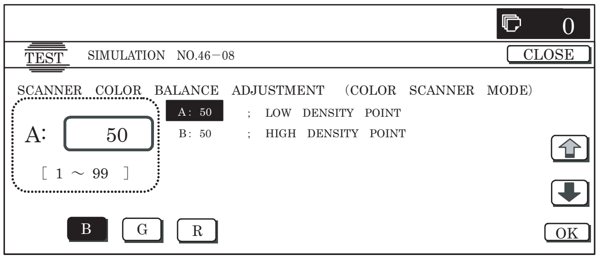
     If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
4) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	LOW DENSITY POINT	Low density side correction set value	1 to 99	50
B	HIGH DENSITY POINT	High density side correction set value	1 to 99	50



SCANNER COLOR BALANCE ADJUSTMENT (COLOR SCANNER MODE)

A: 50 ; LOW DENSITY POINT

B: 50 ; HIGH DENSITY POINT

46-9

Purpose : Adjustment

Function (Purpose) : Used to adjust the exposure.

Section : RSPF

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

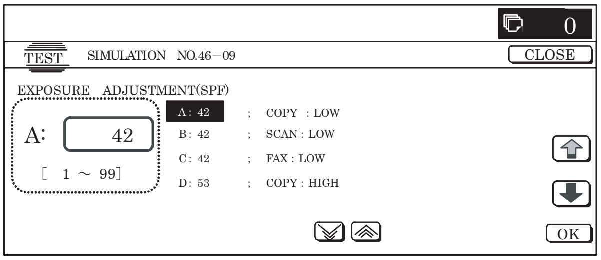
     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
   - * The set values can be collectively changed by pressing [▽] [△] buttons.

     When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.
3) When [OK], [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.
   - * When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.
   - * Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	COPY: LOW	RSPF copy mode exposure adjustment (low density side)	1 to 99	42
B	SCAN: LOW	RSPF scanner mode exposure adjustment (low density side)	1 to 99	42
C	FAX: LOW	RSPFFAX mode exposure adjustment (low density side)	1 to 99	42
D	COPY: HIGH	RSPF copy mode exposure adjustment (high density side)	1 to 99	53
E	SCAN: HIGH	RSPF scanner mode exposure adjustment (high density side)	1 to 99	53
F	FAX: HIGH	RSPFFAX mode exposure adjustment (high density side)	1 to 99	53



EXPOSURE ADJUSTMENT(SPF)

A: 42 ; COPY : LOW

B: 42 ; SCAN : LOW

C: 42 ; FAX : LOW

D: 53 ; COPY : HIGH

46-10

Purpose : Adjustment

Function (Purpose) : Used to the copy density adjustment (manual). (color mode)

Section : Engine

Item : Operation

Operation/Procedure

1) Select an item to be set.

   When a button is pressed, the display is shifted to each setting screen.
2) Select a color.
   - * Select [K](BLACK), [C](CYAN), [M](MAGENTA), or [Y](YELLOW) button. The selected button is displayed and the adjustment value of the selected color is displayed.
   - * Only one color can be selected. The selected button is highlighted.

     On the initial screen, [K] is selected.
3) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

- * If there is any item over [↑], an active display is made and item is shifted.

  If there is no item over [↑], the display grays out and the operation is invalid.

  If there is any item under [↓], an active display is made and item is shifted.

  If there is no item over [↓], the display grays out and the operation is invalid.

4) Enter the set value with 10-key.
   - * When [C] key is pressed, the input value is cleared.
   - * The set values can be collectively changed by pressing [▽] [△] buttons.

     When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.
5) When [OK], [EXECUTE], [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.
6) When [EXECUTE] button is pressed, it is highlighted and self print is executed.
   - * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during self print, the operation is terminated.
   - * After completion of self print, [EXECUTE] button returns to the original state.

* When [SYSTEM SETTINGS] key is pressed once during setting, the display returns to the menu selecting screen.

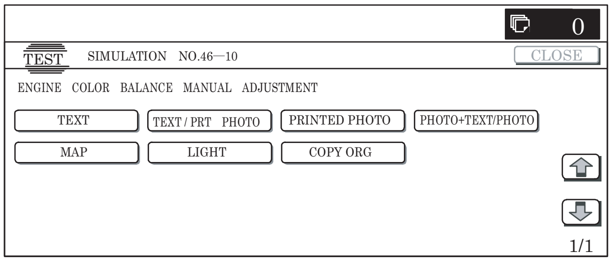
* When [SYSTEM SETTINGS] key is pressed twice during setting, the display returns to the sub number entry screen.

<Setting item>

Item	Item content
TEXT	Text
TEXT/PRT PHOTO	Text/Printed Photo
PRINTED PHOTO	Printed Photo
PHOTO+TEXT/PHOTO	Photo+Text/Photo
MAP	Map
LIGHT	Light density document
COPY ORG	Copy document

<Set range and default value of each setup>

Item	Display	Item	Set range	Default value
A	POINT1	Point 1	245 to 755	500
B	POINT2	Point 2	245 to 755	500
C	POINT3	Point 3	245 to 755	500
D	POINT4	Point 4	245 to 755	500
E	POINT5	Point 5	245 to 755	500
F	POINT6	Point 6	245 to 755	500
G	POINT7	Point 7	245 to 755	500
H	POINT8	Point 8	245 to 755	500
I	POINT9	Point 9	245 to 755	500
J	POINT10	Point 10	245 to 755	500
K	POINT11	Point 11	245 to 755	500
L	POINT12	Point 12	245 to 755	500
M	POINT13	Point 13	245 to 755	500
N	POINT14	Point 14	245 to 755	500
O	POINT15	Point 15	245 to 755	500



TEST SIMULATION NO.46—10

ENGINE COLOR BALANCE MANUAL ADJUSTMENT

46-16

Purpose : Adjustment

Function (Purpose) : Used to the copy density adjustment (manual) [Monochrome, all modes] PG print.

Section : Engine

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

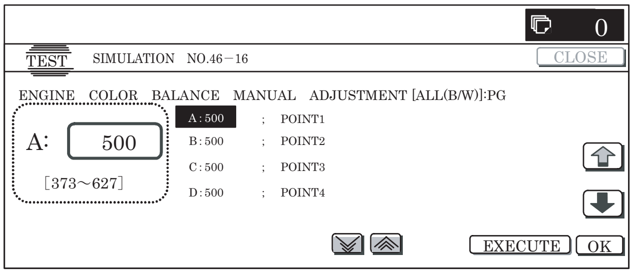
     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
   - * The set values can be collectively changed by pressing [△] [▽] buttons.

     When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.
3) When [EXECUTE] button is pressed, it is highlighted and self print is started.
   - * When [OK], [EXECUTE], [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.
   - * After completion of self print, [EXECUTE] button returns to the normal display.

<Set range and default value of each setup>

Item	Display	Item	Set range	Default value
A	POINT1	Point 1	373 to 627	500
B	POINT2	Point 2	373 to 627	500
C	POINT3	Point 3	373 to 627	500
D	POINT4	Point 4	373 to 627	500
E	POINT5	Point 5	373 to 627	500
F	POINT6	Point 6	373 to 627	500
G	POINT7	Point 7	373 to 627	500
H	POINT8	Point 8	373 to 627	500
I	POINT9	Point 9	373 to 627	500
J	POINT10	Point 10	373 to 627	500
K	POINT11	Point 11	373 to 627	500
L	POINT12	Point 12	373 to 627	500
M	POINT13	Point 13	373 to 627	500
N	POINT14	Point 14	373 to 627	500
O	POINT15	Point 15	373 to 627	500



TEST SIMULATION NO.46—16

ENGINE COLOR BALANCE MANUAL ADJUSTMENT [ALL(B/W)]:PG

A: 500

[373～627]

A : 500 ; POINT1
B : 500 ; POINT2
C : 500 ; POINT3
D : 500 ; POINT4

46-19

Purpose : Setting

Function (Purpose) : Used to set the BLACK auto exposure mode.

Section : Scanner

Item : Operation

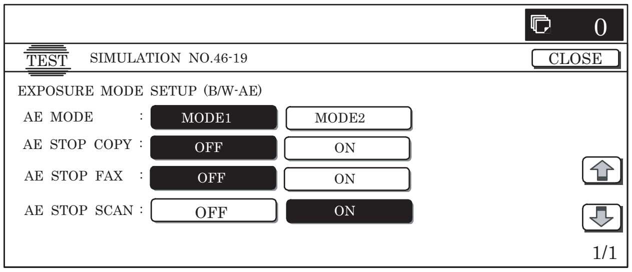
Operation/Procedure

1) When the machine enters the simulation, the current set status is highlighted.
2) Press a set value button to be changed, and the button is highlighted and the set value is saved to EEPROM and RAM. (In this example, [MODE2] button is pressed.)
   * Only one item can be selected.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.
* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each set value>

Item	Content	Set value	Default value
AE_MODE	Auto exposure mode	MODE1, MODE2	MODE1
AE_STOP_COPY	Auto BLACK exposure STOP (for copy)	ON/OFF	ON
AE_STOP_FAX	Auto BLACK exposure STOP (for FAX)	ON/OFF	ON
AE_STOP_SCAN	Auto BLACK exposure STOP (for scanner)	ON/OFF	ON



46-21

Purpose : Adjustment

Function (Purpose) : Used to perform the copy color balance manual correction.
[Color, All modes]: PG print

Section : Engine

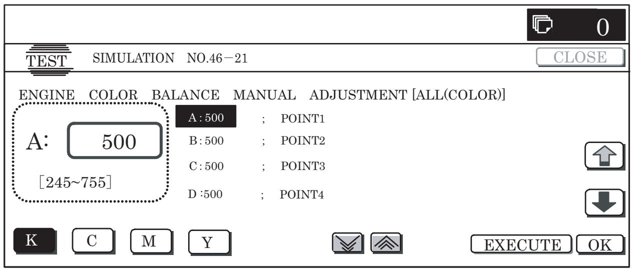
Item : Adjustment

Operation/Procedure

1) Select a color with [K][C][M][Y] buttons. The adjustment value of the selected color is displayed. (In this example, [C] is selected.)
   * Only one color button can be selected. The selected button is highlighted. (On the default display, [K] is selected.)
   * Select the set item with [↑] and [↓] buttons.
     The highlighted set value is switched and the value is displayed in the setting area.
   * If there is any item over [↑], an active display is made and item is shifted.
     If there is no item over [↑], the display grays out and the operation is invalid.
     If there is any item under [↓], an active display is made and item is shifted.
     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   * Press [C] key to clear the entered values.
   * The set values can be collectively changed by pressing [▽] [△] buttons.
     When the set value is not the upper limit value (lower limit value), the data of each item is increased (decreased) by 1.
3) When [EXECUTE] button is pressed, it is highlighted, and self print is started.
   * When [OK], [EXECUTE], [↑], [↓], [△], [▽] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.
   * After completion of self print, [EXECUTE] button returns to the normal display.
   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during self-printing, the operation is stopped.

<Set range and default value of each setup>

Item	Display	Item	Set range	Default value
A	POINT1	Point 1	245 to 755	500
B	POINT2	Point 2	245 to 755	500
C	POINT3	Point 3	245 to 755	500
D	POINT4	Point 4	245 to 755	500
E	POINT5	Point 5	245 to 755	500
F	POINT6	Point 6	245 to 755	500
G	POINT7	Point 7	245 to 755	500
H	POINT8	Point 8	245 to 755	500
I	POINT9	Point 9	245 to 755	500
J	POINT10	Point 10	245 to 755	500
K	POINT11	Point 11	245 to 755	500
L	POINT12	Point 12	245 to 755	500
M	POINT13	Point 13	245 to 755	500
N	POINT14	Point 14	245 to 755	500
O	POINT15	Point 15	245 to 755	500



46-23

Purpose : Setting

Function (Purpose) : Used to set ENABLE/DISABLE of the half tone highest density correction.

Section :

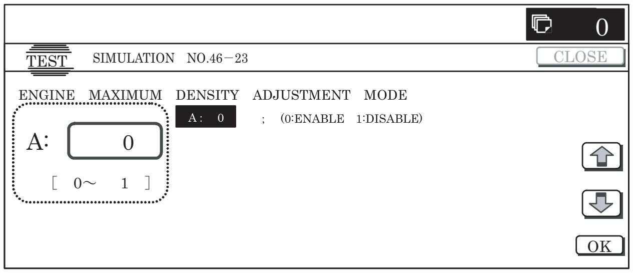
Item : Specifications

Operation/Procedure

1) Enter the set value with 10-key.
   * Press [C] key to clear the entered values.
2) When [OK] button, [COLOR] or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Display	Content		Set range	Default value
A	(0: ENABLE 1: DISABLE)	0	Engine highest density correction mode ENABLE	0 to 1	0
		1	Engine highest density correction mode DISABLE		



SIMULATION NO.46−23

ENGINE MAXIMUM DENSITY ADJUSTMENT MODE

A: 0 ; (0:ENABLE 1:DISABLE)

A: 0

[0～ 1]

46-24

Purpose : Adjustment

Function (Purpose) : Used to the copy color balance auto adjustment.

Section : Engine

Item : Adjustment

Operation/Procedure

1) When the machine enters Simulation 46-24, the initial screen is displayed.

   When [EXECUTE] button is pressed, the high density process control is executed and self print of 48 patches is started.

   Check to confirm that there is A3 paper on the paper feed tray. If there is no A3 paper, supply it.

2) While the high density process control is executed, [EXECUTE] button is highlighted.

3) During the self print of 48 patches, [EXECUTE] button is highlighted.

4) After completion of the self print, the display is shifted to the output patch read standby screen.

   Place the printed 48 patches on the glass table, and press [FACTORY] or [SERVICE] button to select the process mode.

5) When [EXECUTE] button is pressed, it is highlighted and the 48 patches set on the table glass are scanned.

   Check to confirm that there is A3 paper on the paper feed tray. If there is no A3 paper, supply it.

6) After reading the patches, self print of 16patches is automatically started.

7) After completion of the self print, the display is shifted to the registration standby screen. When [REPEAT] button is pressed, the display returns to the initial screen without executing registration.

   [When [OK] button is pressed, the correction value is saved to EEPROM and RAM, and the half tone process control reference value correction is started.

8) The display is shifted to the reference value registration process 1 end screen automatically, and the reference value registration process 2 (BLACK) is executed automatically.

9) After completion of the reference value registration process 2, the following message is displayed. (Each message is automatically shifted.)

   BLACK: 2ND STEP BLACK END

   CYAN: 2ND STEP CYAN END

   MAGENTA: 2ND STEP MAGENTA END

   YELLOW: 2ND STEP YELLOW END

   * When the process control is executed second time, "2nd" is displayed.

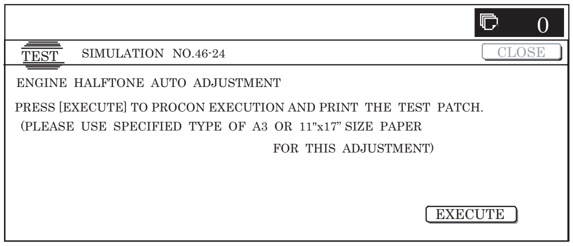
10) All the registration processes are completed normally.

* When [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during self print, the operation is interrupted.

[Cancel during execution of the operation]

- To cancel and resume the operation, press [EXECUTE].

(Initial screen)

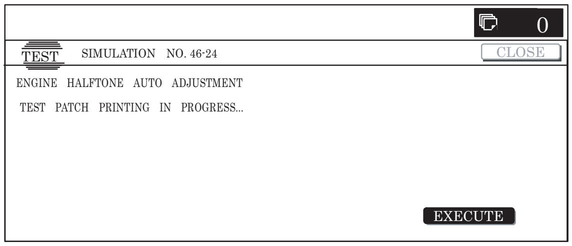


SIMULATION NO.46-24

ENGINE HALFTONE AUTO ADJUSTMENT

PRESS [EXECUTE] TO PROCON EXECUTION AND PRINT THE TEST PATCH.
(PLEASE USE SPECIFIED TYPE OF A3 OR 11"x17" SIZE PAPER
FOR THIS ADJUSTMENT)

(48-patch print)

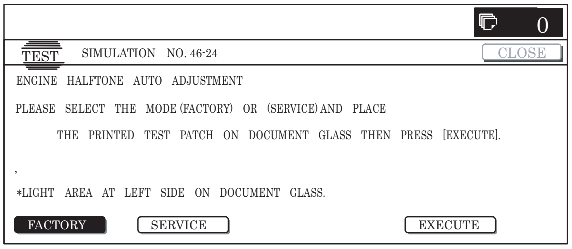


SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

TEST PATCH PRINTING IN PROGRESS...

(Output patch read (FACTORY))



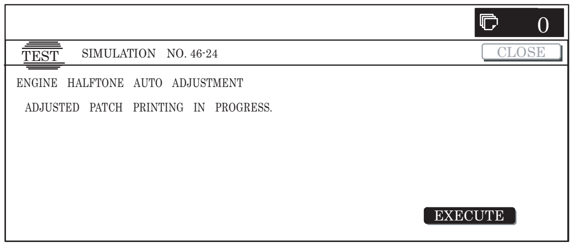
SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

PLEASE SELECT THE MODE (FACTORY) OR (SERVICE) AND PLACE
THE PRINTED TEST PATCH ON DOCUMENT GLASS THEN PRESS [EXECUTE].

*LIGHT AREA AT LEFT SIDE ON DOCUMENT GLASS.

(16-patch self print)

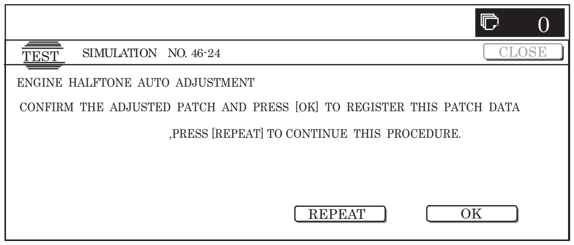


SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

ADJUSTED PATCH PRINTING IN PROGRESS.

(Standby for registration process)

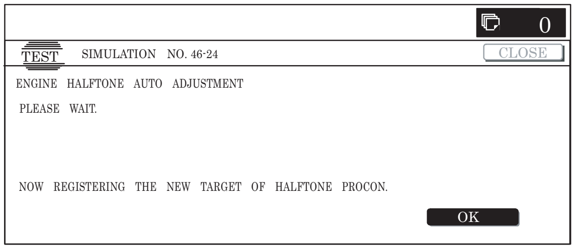


SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

CONFIRM THE ADJUSTED PATCH AND PRESS [OK] TO REGISTER THIS PATCH DATA
,PRESS [REPEAT] TO CONTINUE THIS PROCEDURE.

(Registration of half tone process control reference value)



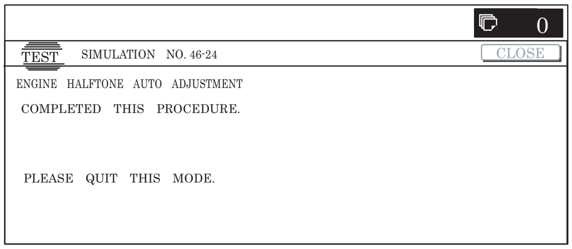
SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

PLEASE WAIT.

NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON.

(Completion of all the processes)



SIMULATION NO. 46-24

ENGINE HALFTONE AUTO ADJUSTMENT

COMPLETED THIS PROCEDURE.

PLEASE QUIT THIS MODE.

46-25

Purpose : Adjustment

Function (Purpose) : Used to execute the fine adjustment of single color mode color balance.

Section : Image process (ICU)

Item : Adjustment

Operation/Procedure

1) Select a color to be set. (In this example, [C] (Cyan) is selected.)
   - * When a color button ([C](Cyan), [M](Magenta), [Y](Yellow)) is selected, the selected button is highlighted and the adjustment value of the selected button is displayed.
   - * Only one color can be selected. The selected button is highlighted.

     In the initial state, [C] is selected.
2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

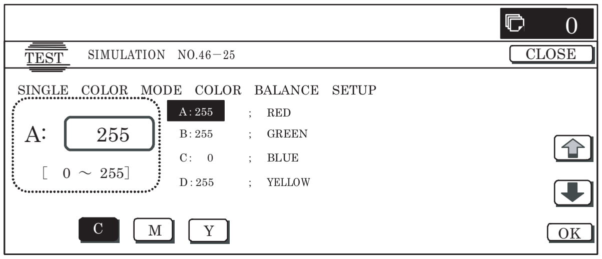
     If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
4) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Description	Range	Default value		
			C	M	Y
A	RED	0 to 255	0	255	255
B	GREEN	0 to 255	255	0	255
C	BLUE	0 to 255	255	255	0
D	YELLOW	0 to 255	0	0	255
E	MAGENTA	0 to 255	0	255	0
F	CYAN	0 to 255	255	0	0



SIMULATION NO.46−25

SINGLE COLOR MODE COLOR BALANCE SETUP

A: 255

[0 ～ 255]

A:255 ; RED
B:255 ; GREEN
C: 0 ; BLUE
D:255 ; YELLOW

46-26

Purpose : Adjustment

Function (Purpose) : Used to reset the single color mode color balance set value to the default.

Section : Image process (ICU)

Item : Adjustment

Operation/Procedure

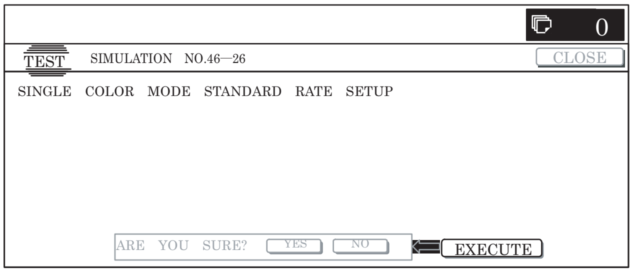
1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active display.
2) Press [YES] button.

   The single color mode color balance set value is reset to the default value. [YES] button is highlighted.
   - * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
   - * After completion of default reset of the single color mode color balance set value, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
   - * The restored data are saved to EEPROM and RAM.

<Standard value reset item>

	Standard value reset item
1	RED set ratio
2	GREEN set ratio
3	BLUE set ratio
4	YELLOW set ratio
5	MAGENTA set ratio
6	CYAN set ratio



SIMULATION NO.46—26

SINGLE COLOR MODE STANDARD RATE SETUP

ARE YOU SURE?

46-27

Purpose : Adjustment

Function (Purpose) : Used to set the engine gamma calculating formula coefficient.

Section : Image process (ICU)

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

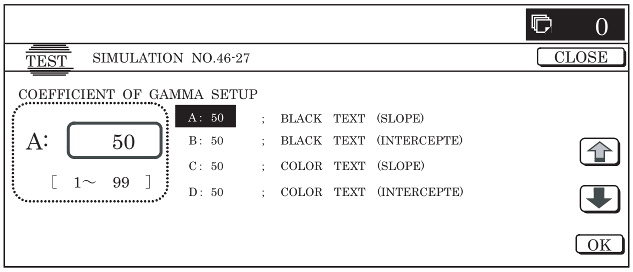
     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.

- * Copying can be performed also by pressing [COLOR]/[BLACK] key.
- * When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

<Set range and default value of each setup>

Item	Display	Set range	Set range	Default value
A	BLACK TEXT (SLOPE)	Black text edge area engine γ curve calculating coefficient (slope) setting	1 to 99	50
B	BLACK TEXT (INTERCEPT)	Black text edge area engine γ curve calculating coefficient (intercept) setting	1 to 99	50
C	COLOR TEXT (SLOPE)	Color text edge area engine γ curve calculating coefficient (slope) setting	1 to 99	50
D	COLOR TEXT (INTERCEPT)	Color text edge area engine γ curve calculating coefficient (intercept) setting	1 to 99	50
E	ED TEXT (SLOPE)	Error diffusion edge area engine γ curve calculating coefficient (slope) setting	1 to 99	50
F	ED TEXT (INTERCEPT)	Error diffusion edge area engine γ curve calculating coefficient (intercept) setting	1 to 99	50



SIMULATION NO.46-27

COEFFICIENT OF GAMMA SETUP

A: 50

[1～ 99]

A : 50 ; BLACK TEXT (SLOPE)
B : 50 ; BLACK TEXT (INTERCEPTE)
C : 50 ; COLOR TEXT (SLOPE)
D : 50 ; COLOR TEXT (INTERCEPTE)

46-28

Purpose : Adjustment

Function (Purpose) : (Information on this simulation may be requested in some cases. However, this function is basically not used in the market.) Used to check the auto exposure/Auto document recognition/ Line number recognition (Color mode). If the local memory size is less than 256MB, the operation of this simulation may not operate normally.

Section : Image process (ICU)

Item : Adjustment

Operation/Procedure

1) Press [EXECUTE] button to start scanning. After completion of scanning, the result is displayed.
2) Press [NEXT] button to switch to the process data of another category.

   Use [↓] and [↑] keys to change the display page of the process data.

   * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

   If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.
3) Press [SETUP] button to return to the initial screen.

- * Copying can be performed also by pressing [COLOR]/[BLACK] key.
- * When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.
- * When [NEXT] button is pressed under the final category data display state, the head category data are displayed.
- * Pressing [NEXT] button displays the next category data regardless of the display page.

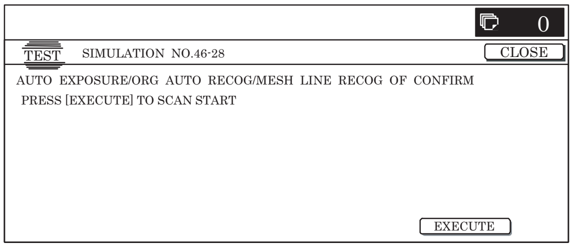
<Content of process data>

Category	Detail of category	Display		Content		Set range/ Number of digits	Remark
ACS (Auto recognition of Color document/ Monochrome document)	RESULT (Judgment result)	COL/MONO	COLOR	2 kinds (COLOR document, Monochrome document)	COLOR	1 to 2	
			MONO		BLACK		
	STATISTICS (Image process statistic amount)	ACSCONT		ACS judgment counter value		Max. 10 digits	A3 pixel number
COLOR AE (Color auto exposure)	RESULT (Judgment result)	SITAJI_JUDGE		Base division detection result		0 to 32	
	STATISTICS (Image process statistic amount)	RATE_SCR		Mesh ratio		0 to 10000	
		SHITAJI		Base number judgment result		0 to 3	
		BEAT_JUDGE		Background judgment result		0 to 8	
		SUM_SITAJI_SCR		Base area mesh number		Max. 10 digits	A3 pixel number

Category	Detail of category	Display		Content		Set range/ Number of digits	Remark
ORG RECOG (Document type auto recognition)	RESULT (Judgment result)	ORIGINAL	TXT	Document	Auto text	1	
			TXT/HT		Auto text mesh	2	
			HT		Auto mesh	3	
			TXT/PIC		Auto text/photo	4	
			PIC		Auto photo	5	
			TXT ON HT		Auto text on dot	6	
			OHT		Other auto	7	
		BACKGROUND	–	Base	None	1	
			GR		Gray	2	
			WH		White	3	
			NE		Newspaper	4	
			WH_GR		White gray	5	
			WH_NE		White newspaper	6	
			WH_CO		White color	7	
			CO		Color	8	
			IM		Image	9	
		MESH	–	Mesh	No mesh	0	
			IMAGE		Image mesh	1	
			BASE		Base mesh (Non-image mesh)	2	
		HTFE	HIGH	Line	High number of lines	1	
			LOW		Low number of lines	0	
	STATISTICS (Image process statistic amount)	HTCNT		Mesh counter value		Max. 10 digits	A3 pixel number
		PHOTOCNT		Photographic paper counter value		Max. 10 digits	A3 pixel number
		STRCNT		Text counter value		Max. 10 digits	A3 pixel number
		FLATCNT		Background counter value		Max. 10 digits	A3 pixel number
		PREHTCNT		Document type judgment mesh counter value		Max. 10 digits	A3 pixel number
		HTXTCNT		Text on mesh counter value		Max. 10 digits	A3 pixel number
		SUMF		Flat mesh counter value		Max. 10 digits	
		SUMM_L		Total of Max. reverse numbers (lower 32bit)		Max. 10 digits	
		SUMM_H		Total of Max. reverse numbers (Upper 4bit)		Max. 3 digits	
		SUMFM_L		Total of flat section max. reverse number (lower 32bit)		Max. 10 digits	
		SUMFM_H		Total of flat section max. reverse number (Upper 4bit)		Max. 3 digits	
		FHSTDR		Background pixel histogram value (RED)		Max. 10 digits	#1 to #32 display A3 pixel number
		FHSTDG		Background pixel histogram value (GREEN)		Max. 10 digits	
		FHSTDB		Background pixel histogram value (BLUE)		Max. 10 digits	
		HTHSTDR		Mesh pixel histogram value (RED)		Max. 10 digits	

Category	Detail of category	Display		Content		Set range/ Number of digits	Remark
ORG RECOG (Document type auto recognition)	STATISTICS (Image process statistic amount)	HTHSTDG		Mesh pixel histogram value (GREEN)		Max. 10 digits	
		HTHSTDB		Mesh pixel histogram value (BLUE)		Max. 10 digits	
		LHSTD		L component histogram value other than mesh		Max. 10 digits	
		MDHSTD		Max. difference histogram value other than mesh		Max. 10 digits	
		OHSTDR		Pixel histogram value other than mesh (RED)		Max. 10 digits	
		OHSTDG		Pixel histogram value other than mesh (GREEN)		Max. 10 digits	
		OHSTDB		Pixel histogram value other than mesh (BLUE)		Max. 10 digits	
		SUM_BETA_RGB		Total of high-level division number in background pixel histogram		0 to 32	
		EREA_BETA RGB		Number of high-level division areas in background pixel histogram (for base)		0 to 16	
		SUM_BETA_PHOTORGB		Number of high-level division areas in background pixel histogram (for photographic paper)		0 to 16	
		RATE_BETA		Background ratio		0 to 10000	
		SHITAJI		Base number judgment result		0 to 3	
		BETA_JUDGE		Background judgment result		0 to 8	
		RATE_SCR		Mesh ratio		0 to 10000	
		RATE_SCR2		Mesh judgment ratio		0 to 10000	
		RATE_TSCR		Text-on-mesh ratio		0 to 10000	
		HTFE_JUDGE		Line number judgment result		Max. 3 digits	
		SCR_HIST_JUDGE		Mesh histogram judgment result		0 to 2	
		SCR_CNT_JUDGE		Mesh counter value judgment result		0 to 1	
		TSCR_JUDGE		Text-on-mesh counter value judgment result		0 to 2	
		SCR_JUDGE		Mesh judgment result		0 to 5	
		RATE_OTHER		Other ratio		0 to 10000	
		TEXT_JUDGE		Text judgment result		0 to 1	
		PHOTO_CNT_JUDGE		Photographic paper pixel counter value judgment result		0 to 1	
		OTHER_JUDGE		Other pixel counter value judgment result		0 to 1	
		PHOTO_JUDGE		Photographic paper judgment result		0 to 1	
		TH_BETA2		Threshold value to detect high-level division in background pixel histogram		A3 pixel number	
		TH_BETA_PHT2		Threshold value to detect high-level division in background pixel histogram (photographic paper)		Max. 2 digits	
		TH_SCR2		Mesh high-level threshold value		Max. 5 digits	A3 pixel number
		TH_SCR_CNT2		Threshold value for the mesh counter value		Max. 5 digits	
		TH_TSCR_CNT2		Threshold value for the text-on-mesh counter value		Max. 5 digits	A3 pixel number
		TH_TEXT2		Text judgment threshold value		Max. 10 digits	A3 pixel number
		TH_PHOTO2		Photographic paper judgment threshold value		Max. 10 digits	A3 pixel number
		ALLCNT		Total pixel number of judgment area		Max. 10 digits	A3 pixel number
		HTFE RESULT	HIGH2	Number of mesh lines	High number of lines 2 (htfe_out = 3)	2	
			HIGH1		High number of lines 1 (htfe_out = 2)	1	
			LOW1		Low number of lines 1 (htfe_out = 1)	3	
			LOW2		Low number or lines 2 (htfe_out = 0)	4	
		REVERSE AVE		Max. reverse average		0 to 100.00	********: ave_m (When 100 is exceeded, "-" is displayed.)
		REVERSE AVE(FLAT)		Flat section max. reverse average		0 to 100.00	******** : ave_fm (When 100 is exceeded, "-" is displayed.)
		FLAT SELECT	YES	Flat section mesh pixel comparison	When flatr > THflatr	0	
			NO		When other than flatr > THflatr	1	

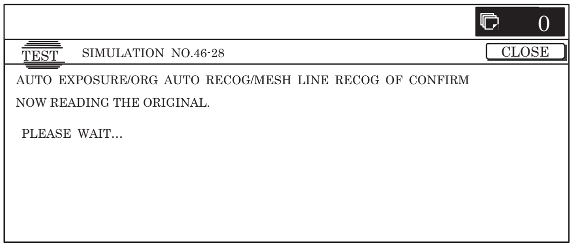
(Initial screen)



SIMULATION NO.46-28

AUTO EXPOSURE/ORG AUTO RECOG/MESH LINE RECOG OF CONFIRM
PRESS [EXECUTE] TO SCAN START

(Completion of scan = ACS judgment result screen)



SIMULATION NO.46-28

AUTO EXPOSURE/ORG AUTO RECOG/MESH LINE RECOG OF CONFIRM
NOW READING THE ORIGINAL.

PLEASE WAIT...

* Press [↓] to display the image process statistic amount, and press [NEXT] to display the judgment result of "COLOR AE","ORG RECOG", and"SCR RECOG".

46-33

Purpose : Setting

Function (Purpose) : Used to execute the color auto mode adjustment.

Section : Image process (ICU)

Item : Image quality

Operation/Procedure

NOTE: Unless a special change is required, keep the default values except for the following items. For the following items, change the set values according to the necessity.

COLOR AE(SW MODE 1 - 7 / TH MAX MONO / TH MAX COLOR / SW NEWS / TH MODE SCR)
ACS(SIM LEVEL)

1) Select a category to be set with [NEXT] and [BAC] buttons. (In this example, "ACS4 digits or less" is set.)
2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.
4) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.
5) Select a desired button.

   The selected button is highlighted and the value is displayed. (In the default state, [TH_ACS5 ENLARGE] is highlighted.)
6) Enter a new value (000000002 in this example) with 10-key.

   * The number of digits is max. 9. The 10th digit cannot be entered. Entry is made after clearing.

   * 10-key: [0] to [9]

   * Press [C] key to clear the entered values.
7) When [SET] button is pressed, setting is revised.

* The display in the frame of [NEW] is deleted, and the value entered in the procedure 6 is displayed in the column of [PRESENT].

* If a new value if less than 9 digits, revision is not made.

* Switch the category sequentially with [NEXT] and [BACK] buttons.

<Set range and default value of each setup>

Category	Item	Display	Content		Set range/Number of digits			Default value	Screen type
ACS	4 digits or less setting	A	THCLMK_1		Pixel judgment threshold value (1)	0 – 9		7	A
		B	THCLBK_1		Final pixel judgment threshold value (1)	0 – 3		2	
		C	ACSMSK_1		ACS mask size select (1)	0 – 1		0	
		D	THCLMK_2		Pixel judgment threshold value (2)	0 – 9		7	
		E	THCLBK_2		Final pixel judgment threshold value (2)	0 – 3		2	
		F	ACSMSK_2		ACS mask size select (2)	0 – 1		0	
		G	THCLMK_3		Pixel judgment threshold value (3)	0 – 9		7	
		H	THCLBK_3		Final pixel judgment threshold value (3)	0 – 3		2	
		I	ACSMSK_3		ACS mask size select (3)	0 – 1		0	
		J	THCLMK_4		Pixel judgment threshold value (4)	0 – 9		7	
		K	THCLBK_4		Final pixel judgment threshold value (4)	0 – 3		2	
		L	ACSMSK_4		ACS mask size select (4)	0 – 1		0	
		M	THCLMK_5		Pixel judgment threshold value (5)	0 – 9		7	
		N	THCLBK_5		Final pixel judgment threshold value (5)	0 – 3		2	
		O	ACSMSK_5		ACS mask size select (5)	0 – 1		0	
		P	SIM_LEVEL		ACS judgment select switch (density difference)	1 – 3		2	
		Q	TH_ACS5_RT		TH_ACS5: Calculation ratio of the threshold value for reduction	0 – 100		50	
	5 digits or less setting	A	TH_ACS5 ENLARGE		ACS judgment threshold value 5 (for enlargement)	0 – 134217727 (A3 pixel number)		000030000	B
COLOR AE	4 digits or less setting	A	SW_MODE1	ON	Base detection of auto text document	0 – 1	1	1	A
				OFF			0		
		B	SW_MODE2	ON	Base detection of auto text mesh document	0 – 1	1	1	
				OFF			0		
		C	SW_MODE3	ON	Base detection of auto text-on-mesh document	0 – 1	1	1	
				OFF			0		
		D	SW_MODE4	ON	Base detection of auto mesh document	0 – 1	1	0	
				OFF			0		
		E	SW_MODE5	ON	Base detection of auto photo document	0 – 1	1	0	
				OFF			0		
		F	SW_MODE6	ON	Base detection of auto text/ photo document	0 – 1	1	0	
				OFF			0		
		G	SW_MODE7	ON	Base detection of auto other document	0 – 1	1	0	
				OFF			0		
		H	TH_MAX_MONO		Monochrome base detection threshold value	0 – 32		17	
		I	TH_MAX_COLOR		Color base detection threshold value	0 – 32		17	
		J	SW_NEWS		Newspaper base forcible removal switch	0 – 1		0	
		K	SW_MODE_SCR1		Mesh area base judgment switch	1 – 3		3	
		L	SW_MODE_SCR2		Mesh area base removal select switch	0 – 1		0	
		M	SW_MODE_MIX		Auto other document base detection switch	1 – 2		2	
		N	SW_HOSEI		Correction table correction	0 – 8 (-4 – +4)		4	
	5 digits or less setting	A	TH_MODE_SCR		Mesh ratio threshold value	0 – 10000		03000	B
		B	TH_SITAJI_SCR		Base mesh threshold value	0 – 10000		03000	

Category	Item	Display	Content		Set range/Number of digits				Default value	Screen type
ORG RECOG	4 digits or less setting	A	MVSTRSEL REDUCE		Text pixel judgment result select register (for reduction)		0 – 2		0	A
		B	MVSTRSEL ENLARGE		Text pixel judgment result select register (for enlargement)		0 – 2		0	
		C	PSEL1 REDUCE		Photographic paper judgment table select register for each signal (for reduction)		0 – 1		0	
		D	PSEL1 ENLARGE		Photographic paper judgment table select register for each signal (for enlargement)		0 – 1		0	
		E	PSEL2 REDUCE		Photographic paper pixel final judgment table select register (for reduction)		0 – 2		0	
		F	PSEL2 ENLARGE		Photographic paper pixel final judgment table select register (for enlargement)		0 – 2		0	
		G	BUSYSEL REDUCE		Frequency comparison value select register (for reduction)		0 – 1		1	
		H	BUSYSEL ENLARGE		Frequency comparison value select register (for enlargement)		0 – 1		1	
		I	HTSEL REDUCE	AREA	Mesh judgment result select (for reduction)	Area separation mesh judgment result	0 – 1	0	1	
				ORG		Document discrimination mesh judgment result		1		
		J	HTSEL ENLARGE	AREA	Mesh judgment result select (for enlargement)	Area separation mesh judgment result	0 – 1	0	1	
				ORG		Document discrimination mesh judgment result		1		
		K	ASEL REDUCE		Integrated judgment priority select register (for reduction)		0 – 23		16	
		L	ASEL ENLARGE		Integrated judgment priority select register (for enlargement)		0 – 23		16	
		M	HSTSEL REDUCE		Histogram division fluctuation register (for reduction)		0 – 3		0	
		N	HSTSEL ENLARGE		Histogram division fluctuation register (for enlargement)		0 – 3		0	
		O	HSTSEL2 REDUCE		Max. density difference histogram division fluctuation register (for reduction)		0 – 3		3	
		P	HSTSEL2 ENLARGE		Max. density difference histogram division fluctuation register (for enlargement)		0 – 3		3	
		Q	TH_SUM_BETARGB		Threshold value of all divisions of background high level number (for base)		0 – 32		6	
		R	TH_BETA_SUB		Monochrome base judgment threshold value		0 – 32		5	
		S	TH_WHITE_BETA		White base judgment threshold value		0 – 32		25	
		T	TH_GRAY_BETA1		Gray base judgment threshold value 1		0 – 32		18	
		U	TH_GRAY_BETA2		Gray base judgment threshold value 2		0 – 32		25	
		V	TH_NOISE REDUCE		Mesh noise threshold value (for reduction)		0 – 32		10	
		W	TH_NOISE ENLARGE		Mesh noise threshold value (for enlargement)		0 – 32		10	
		X	SW_SCR1		Mesh ratio judgment switch		0 – 1		0	
		Y	SW_SCR2		Mesh judgment switch		0 – 1		0	

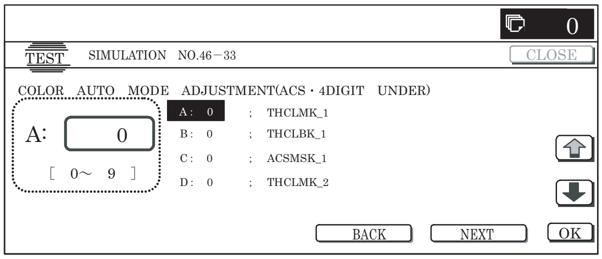
Category	Item	Display	Content	Set range/Number of digits		Default value	Screen type
ORG RECOG	4 digits or less setting	Z	TH_HTFE	Threshold value of high number of lines	0 – 3	0	A
		AA	SW_TSCR	Text-on-mesh judgment switch	0 – 1	1	
		AB	TH_SUM_PHOTO_RGB	Threshold value of all divisions of background high level number (photographic paper)	0 – 32	15	
		AC	TH_BETA_RT	TH_BETA: Calculation ratio of the threshold value for reduction	0 – 100	50	
		AD	TH_SCR_RT	TH_SCR: Calculation ratio of the threshold value for reduction	0 – 100	50	
		AE	TH_SCR_CNT_RT	TH_SCR_CNT: Calculation ratio of the threshold value for reduction	0 – 100	50	
		AF	TH_TSCR_ CNT_RT	TH_TSCR_ CNT: Calculation ratio of the threshold value for reduction	0 – 100	50	
		AG	TH_TEXT_RT	TH_TEXT: Calculation ratio of the threshold value for reduction	0 – 100	50	
		AH	TH_PHOTO_RT	TH_PHOTO: Calculation ratio of the threshold value for reduction	0 – 100	50	
		AI	TH_BETA_PHT_RT	TH_BETA_PHT: Calculation ratio of the threshold value for reduction	0 – 100	50	
	5 digits or less setting	A	TH_BETA ENLARGE	Threshold value to detect high level number division in background pixel histogram (base) (for enlargement)	0 – 134217727 (A3 pixel number)	1000000	B
		B	TH_SCR ENLARGE	Mesh high level number threshold value (for enlargement)	0 – 134217727 (A3 pixel number)	20000	
		C	TH_SCR_RATE	Threshold value for mesh ratio	0 – 10000	04500	
		D	TH_SCR_CNT EL	Threshold value (for enlargement) for the mesh dot counter value	0 – 134217727 (A3 pixel number)	000800000	
		E	TH_MANSEN_RATE	Ten-thousand line/print area judgment threshold value	0 – 10000	1500	
		F	TH_TSCR_RATE	Threshold value for ratio of text on mesh dots	0 – 10000	00300	
		G	TH_TSCR_CNT EL	Threshold value for counter value of text on mesh (for enlargement)	0 – 134217727 (A3 pixel number)	000010000	
		H	TH_TEXT ENLARGE	Threshold value of text judgment (for enlargement)	0 – 134217727 (A3 pixel number)	000050000	
		I	TH_PHOTO ENLARGE	Threshold value of photography judgment (for enlargement)	0 – 134217727 (A3 pixel number)	000050000	
		J	TH_BETA_RATE	Background ratio threshold value	0 – 10000	03000	
		K	TH_BETA_PHT_EL	Threshold value to detect high density section in background pixel histogram (photograph) (for enlargement)	0 – 134217727	100000	
		L	TH_OTHER	Text judgment threshold value (for reduction)	0 – 10000	07000	
SCR RECOG	4 digits or less setting	A	THBAVEM1 REDUCE	Threshold value 1 for 13 x 7 mask average value (for reduction)	0 – 255	170	A
		B	THBAVEM1 ENLARGE	Threshold value 1 for 13 x 7 mask average value (for enlargement)	0 – 255	170	
		C	THBAVEM2 REDUCE	Threshold value 2 for 13 x 7 mask average value (for reduction)	0 – 255	105	
		D	THBAVEM2 ENLARGE	Threshold value 2 for 13 x 7 mask average value (for enlargement)	0 – 255	105	
		E	THBAVEM3 REDUCE	Threshold value 3 for 13 x 7 mask average value (for reduction)	0 – 255	50	

Category		Item	Display	Content		Set range/Number of digits			Default value	Screen type
SCR RECOG		4 digits or less setting	F	THBAVEM3 ENLARGE		Threshold value 3 for 13 x 7 mask average value (for enlargement)	0 – 255		50	A
			G	CMSUB1 REDUCE		Adjustment value 1 for 13 x 7 mask average value (for reduction)	0 – 255		55	
			H	CMSUB1 ENLARGE		Adjustment value 1 for 13 x 7 mask average value (for enlargement)	0 – 255		55	
			I	CMSUB2 REDUCE		Adjustment value 2 for 13 x 7 mask average value (for reduction)	0 – 255		0	
			J	CMSUB2 ENLARGE		Adjustment value 2 for 13 x 7 mask average value (for enlargement)	0 – 255		0	
			K	MREVSEL REDUCE		High line number judgment method select (for reduction)	0 – 3		0	
			L	MREVSEL ENLARGE		High line number judgment method select (for enlargement)	0 – 3		0	
			M	MSDSEL REDUCE		Output select when MREVSEL=3 (for reduction)	0 – 1		0	
			N	MSDSEL ENLARGE		Output select when MREVSEL=3 (for enlargement)	0 – 1		0	
			O	THAVEFM1 REDUCE		THAVEFM1 for reduction	0 – 720		65	
			P	THAVEFM1 ENLARGE		THAVEFM1 for enlargement	0 – 720		96	
			Q	THAVEFM2 REDUCE		THAVEFM2 for reduction	0 – 720		54	
			R	THAVEFM2 ENLARGE		THAVEFM2 for enlargement	0 – 720		80	
			S	THAVEFM3 REDUCE		THAVEFM3 for reduction	0 – 720		48	
			T	THAVEFM3 ENLARGE		THAVEFM3 for enlargement	0 – 720		70	
			U	THAVEM1 REDUCE		THAVEM1 for reduction	0 – 720		65	
			V	THAVEM1 ENLARGE		THAVEM1 for enlargement	0 – 720		96	
			W	THAVEM2 REDUCE		THAVEM2 for reduction	0 – 720		54	
			X	THAVEM2 ENLARGE		THAVEM2 for enlargement	0 – 720		80	
			Y	THAVEM3 REDUCE		THAVEM3 for reduction	0 – 720		48	
			Z	THAVEM3 ENLARGE		THAVEM3 for enlargement	0 – 720		70	
SEGMENT	4 digits or less setting	Text-on-mesh ON/ OFF (auto/ manual mode)	A	MESH_TXT ON HT		(Auto) text on mesh	0 – 3	0 (THROUGH)	0 (THROUGH)	A
			B	MESH_TXT/HT1		(Auto) text mesh (Under 1, Line 1)		1 (OFF)		
			C	MESH_TXT/HT2		(Auto) text mesh (Under 2, Line 1)		2 (ON1)		
			D	MESH_TXT/PR		(Manual) test print		3 (ON2)		
		Print document text detection level	E	PR_TXT ON HT		(Auto) Text on mesh	0 – 2	0 (THROUGH)		
			F	PR_TXT/HT1		(Auto) text mesh (Under 1, Line 1, 2)		1(ON1)		
			G	PR_TXT/HT2		(Auto) text mesh (Under 1, Line 1, 2)		2 (ON2)		
			H	PR_TXT/PR		(Manual) Text print		3 (ON3)		
			I	PR_CHECK1(*2)	ON	Check button for investigation [(Auto) text on mesh]	0 – 1	0	0	
					OFF			1		
			J	PR_CHECK2(*2)	ON	Check button for investigation [(Auto) Text mesh (Under 2, Line 1, 2)]	0 – 1	0	0	
					OFF			1		
			K	PR_CHECK3(*2)	ON	Check button for investigation [(Auto) Text mesh (Under 2, Line 1, 2)]	0 – 1	0	0	
					OFF			1		
			L	PR_CHECK4(*2)	ON	Check button for investigation [(Manual) text print]	0 – 1	0	0	
					OFF			1		
			M	THWMAX(*2)		THWMAX (Print document text detection level)	0 – 255		220	
			N	THWMIN(*2)		THWMIN (Print document text detection level)	0 – 255		153	

Category		Item	Display	Content		Set range/Number of digits			Default value	Screen type
SEGMENT	4 digits or less setting	Chroma saturation/ No Chroma saturation judgment level	O	COLOR_PRINT MODE		Print mode	0 – 3	0 (THROUGH)	0 (THROUGH)	A
								1(OFF)		
			P	COLOR_PHOTO MODE		Photographic paper mode		2(ON1)		
								3(ON2)		
			Q	COLOR_CHECK1 (*3)	ON	Check button for investigation (Print mode)	0 – 1	0	0	
					OFF			1		
			R	COLOR_CHECK2 (*3)	ON	Check button for investigation (Photographic paper mode)	0 – 1	0	0	
					OFF			1		
			S	THILVC(*3)		THILVC (Chromatic/Achromatic judgment level print system mode)	0 – 255		166	
			T	THACOLL(*3)		THACOLL (Chromatic/ Achromatic judgment level print system mode)	0 – 255		21	
			U	THACOLH(*3)		THACOLH (Chromatic/ Achromatic judgment level print system mode)	0 – 255		18	
			V	THILVG(*3)		THILVG (Chromatic/ Achromatic judgment level print system mode)	0 – 255		118	
			W	THAGRYL(*3)		THAGRYL (Chromatic/ Achromatic judgment level print system mode)	0 – 255		14	
			X	THAGRYH(*3)		THAGRYH (Chromatic/ Achromatic judgment level print system mode)	0 – 255		20	
		Color auto document recognition filter emphasis setting	Y	SCREEN FILTER LEVEL	H	Filter emphasis setting	Heavy emphasis	1 – 3	3 (Auto)	
					L		Light emphasis			
					AUTO		Auto			
		Specification mode area separate (ON/OFF setting)	Z	SEG_ACT_A_OTR	ON	(Auto) Other mode	0 – 1	1	1	
					OFF			0		
			AA	SEG_ACT_M_PRT1	ON	(Manual) Print document mode (Text)	0 – 1	1	1	
					OFF			0		
			AB	SEG_ACT_M_PRT2	ON	(Manual) Print document mode (Text/Print)	0 – 1	1	1	
					OFF			0		
		INDEX direct appointment	AC	SEG_DS_A_TOH		(Auto) Text on mesh	0 – 512		0	
			AD	SEG_DS_M_TPP		(Manual) Text print	0 – 512			
		Quantity of detection adjustment	AE	SEG_ADJ_TPP_BK1		Text print system, Black text 1	0 – 20		10	
			AF	SEG_ADJ_TPP_BK2		Text print system, Black text 2	0 – 20		10	
			AG	SEG_ADJ_TPP_CL		Text print system, Color text	0 – 20		10	
			AH	SEG_ADJ_TPP_PR		Text print system, Chromatic/ Achromatic	0 – 20		10	
			AI	SEG_ADJ_TPP_MESH		Text print system, Mesh	0 – 20		10	
			AJ	SEG_ADJ_TXT_BK1		Text system, Black text 1	0 – 20		10	
			AK	SEG_ADJ_TXT_BK2		Text system, Black text 2	0 – 20		10	
			AL	SEG_ADJ_TXT_CL		Text system, Color text	0 – 20		10	
			AM	SEG_ADJ_TXT_PR		Text system, Chromatic/ Achromatic	0 – 20		10	
			AN	SEG_ADJ_TXT_MESH		Text system, Mesh	0 – 20		10	
			AO	SEG_ADJ_OTR_BK1		Other, Black text 1	0 – 20		10	
			AP	SEG_ADJ_OTR_BK2		Other, Black text 2	0 – 20		10	
			AQ	SEG_ADJ_OTR_CL		Other, Color text	0 – 20		10	
			AR	SEG_ADJ_OTR_PR		Other, Chromatic/Achromatic	0 – 20		10	
			AS	SEG_ADJ_OTR_MESH		Other, Mesh	0 – 20		10	
			AT	BKUCR_ACTM (– 99%)	THROUGH	– 99%	0 – 2	0	0	
					OFF			1		
					ON			2		
			AU	BKUCR_ACTM (100% – 199%)	THROUGH	100% – 199%	0 – 2	0	0	
					OFF			1		
					ON			2		
			AV	BKUCR_ACTM (200% –)	THROUGH	200% –	0 – 2	0	0	
					OFF			1		
					ON			2		

Category	Item		Display	Content		Set range/Number of digits			Default value	Screen type
SEGMENT	4 digits or less setting	Quantity of detection adjustment	AW	BKUCR_ACTA (– 99%)	THROUGH	– 99%	0 – 2	0	0	A
					OFF			1		
					ON			2		
			AX	BKUCR_ACTA (100% – 199%)	THROUGH	100% – 199%	0 – 2	0	0	
					OFF			1		
					ON			2		
			AY	BKUCR_ACTA (200% –)	THROUGH	200% –	0 – 2	0	0	
					OFF			1		
					ON			2		
	5 digits or more setting	Text on mesh ON/ OFF (Auto/ Manual mode)	A	MESH_CHECK1	ON	Check button for investigation [(Auto) text on mesh]	0 – 1	0	0	B
					OFF			1		
			B	MESH_CHECK2	ON	Check button for investigation [(Auto) Text mesh (Under 1, Line 1)	0 – 1	0	0	
					OFF			1		
			C	MESH_CHECK3	ON	Check button for investigation [(Auto) Text mesh (Under 2, Line 1)	0 – 1	0	0	
					OFF			1		
			D	MESH_CHECK4	ON	Check button for investigation [(Auto) text print]	0 – 1	0	0	
					OFF			1		
			E	THED3A(*1)		THED3A (Text on mesh ON/ OFF)	0 – 65535		1000	
			F	THED3B(*1)		THED3B (Text on mesh ON/ OFF)	0 – 65535		1000	

(Initial screen)



SIMULATION NO.46−33

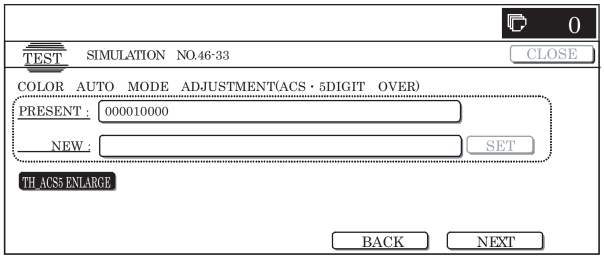
COLOR AUTO MODE ADJUSTMENT(ACS・4DIGIT UNDER)

A: 0

[0～ 9]

A : 0 ; THCLMK_1
B : 0 ; THCLBK_1
C : 0 ; ACSMSK_1
D : 0 ; THCLMK_2

(On the screen, [NEXT] is pressed.)



SIMULATION NO.46-33

COLOR AUTO MODE ADJUSTMENT(ACS・5DIGIT OVER)

PRESENT : 000010000

NEW :

46-36

Purpose : Adjustment

Function (Purpose) : Used to perform the fine adjustment of 2-color (Red, Black) copy.

Section : –

Item : Image quality

Operation/Procedure

1) Select a category to be set.
   - * When [RANGE] (red judgment range), [COEFFICIENT] (output color coefficient) button is pressed to select each category, the selected button is highlighted and the set items of the selected category are displayed.
   - * Only one button can be selected. The selected button is highlighted.

     In the initial state, [RANGE] is selected.
2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

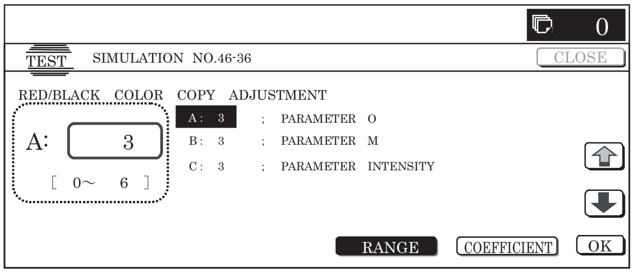
     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
4) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.

<Set range and default value of each setup>

Category	Item	Display	Content	Color button	Set range	Default value		
						C	M	Y
RANGE (Red judgment range)	A	PARAMETER O	Red adjustment coefficient O	—	0 to 6	3		
	B	PARAMETER M	Red adjustment coefficient M	—	0 to 6	3		
	C	PARAMETER INTENSITY	Chroma saturation emphasis coefficient	—	0 to 6	3		
COEFFICIENT (Output color coefficient)	A	RED	R output color	CMY	0 to 255	0	255	255
	B	GREEN	G output color	CMY	0 to 255	255	0	255
	C	BLUE	B output color	CMY	0 to 255	255	255	0
	D	CYAN	C output color	CMY	0 to 255	255	0	0
	E	MAGENTA	M output color	CMY	0 to 255	0	255	0
	F	YELLOW	Y output color	CMY	0 to 255	0	0	255



SIMULATION NO.46-36

RED/BLACK COLOR COPY ADJUSTMENT

A: 3

[0～ 6]

A : 3 ; PARAMETER O
B : 3 ; PARAMETER M
C : 3 ; PARAMETER INTENSITY

46-37

Purpose : Adjustment

Function (Purpose) : Used to perform the BLACK image forming adjustment.

Section :

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [EXECUTE] button is pressed, [YES] and [NO] buttons become active.

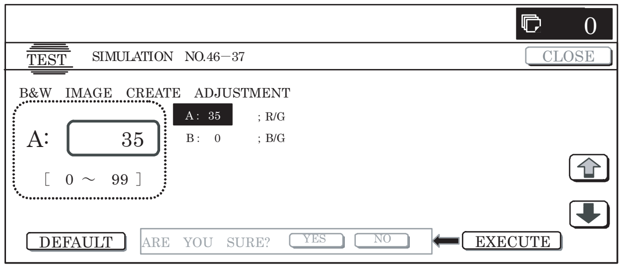
4) When [YES] button is pressed, [YES] button is highlighted. The set value is saved to EEPROM.

   * When [NO] button is pressed, the display returns to the set value changing screen.

5) When [DEFAULT] button is pressed, each set value (ratio) is reset to the default value and the set value is saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	R/G	Gray forming setting (R/G)	0 to 99	35
B	B/G	Gray forming setting (B/G)	0 to 99	0



SIMULATION NO.46—37

B&W IMAGE CREATE ADJUSTMENT

A: 35

[0 ～ 99]

A : 35 ; R/G
B : 0 ; B/G

ARE YOU SURE?

46-39

Purpose : Adjustment

Function (Purpose) : Used to execute the image send sharpness adjustment. (Only when FAX is installed)

Section : FAX

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

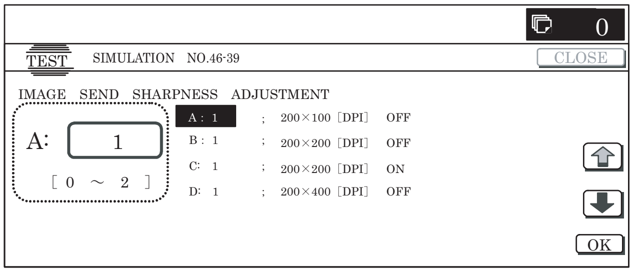
2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	200 x 100[DPI] OFF	200 x 100[DPI] half tone OFF	0 to 2	1
B	200 x 200[DPI] OFF	200 x 200[DPI] half tone OFF	0 to 2	1
C	200 x 200[DPI] ON	200 x 200[DPI] half tone ON	0 to 2	1
D	200 x 400[DPI] OFF	200 x 400[DPI] half tone OFF	0 to 2	1
E	200 x 400[DPI] ON	200 x 400[DPI] half tone ON	0 to 2	1
F	400 x 400[DPI] OFF	400 x 400[DPI] half tone OFF	0 to 2	1
G	400 x 400[DPI] ON	400 x 400[DPI] half tone ON	0 to 2	1
H	600 x 600[DPI] OFF	600 x 600[DPI] half tone OFF	0 to 2	1
I	600 x 600[DPI] ON	600 x 600[DPI] half tone ON	0 to 2	1



A : 1 ; 200×100 [DPI] OFF
B : 1 ; 200×200 [DPI] OFF
C: 1 ; 200×200 [DPI] ON
D: 1 ; 200×400 [DPI] OFF

46-40

Purpose : Adjustment

Function (Purpose) : Used to execute the FAX exposure adjustment. (Collective adjustment of all the modes). (Only when FAX is installed)

Section : MFP/FAX

Item : Image quality

Operation/Procedure

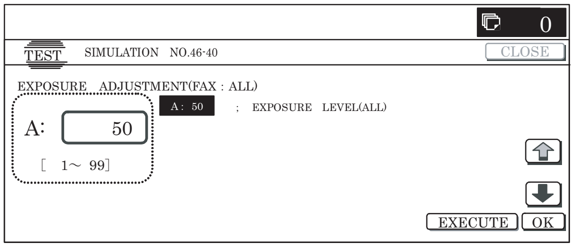
1) Enter the set value with 10-key.
   * When [C] key is pressed, the entered value is cleared.
2) When [EXECUTE] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM. Printing for the adjustment is started.

   After completion of printing, [EXECUTE] button returns to the normal display.
   * When [OK] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

* When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

<Set range and default value of each setup>

Item	Display item & Detail of display	Content	Set range	Default value
A	EXPOSURELEVEL (ALL)	Exposure data value (Collective)	1 to 99	50



A : 50 ; EXPOSURE LEVEL(ALL)

46-41

Purpose : Adjustment

Function (Purpose) : Used to execute the FAX exposure adjustment (Normal). (Only when FAX is installed)

Section : MFP/FAX

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   If there is no item over [↓], the display grays out and the operation is invalid.
   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   * When [C] key is pressed, the entered value is cleared.
3) When [EXECUTE] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM. Printing for the adjustment is started.

   After completion of printing, [EXECUTE] button returns to the normal display.
   * When [↑], [↓], [OK] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

* When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

<Set range and default value of each setup>

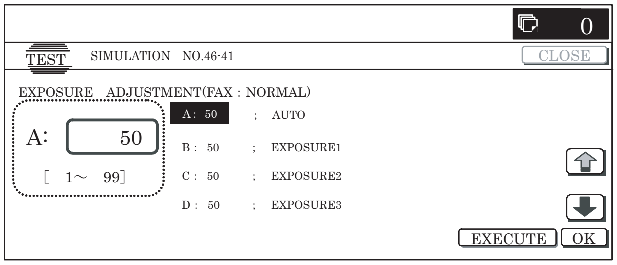
Item	Display item & Detail of display		Content		Set range	Default value
A	AUTO		Auto		1 to 99	50
B	EXPOSURE1		Exposure 1		1 to 99	50
C	EXPOSURE2		Exposure 2		1 to 99	50
D	EXPOSURE3		Exposure 3		1 to 99	50
E	EXPOSURE4		Exposure 4		1 to 99	50
F	EXPOSURE5		Exposure 5		1 to 99	50
G	EXECUTE MODE	AUTO	Print mode	Auto	1	1 (AUTO)
		EXP1		Exposure 1	2	
		EXP2		Exposure 2	3	
		EXP3		Exposure 3	4	
		EXP4		Exposure 4	5	
		EXP5		Exposure 5	6	

* Items G are displayed as "Display item: Detail of display."

  Example: EXECUTE MODE: AUTO

<Reflection to item G after settlement of values>

When [EXECUTE] key is pressed after changing and settlement of exposure adjustment values A to F, the data are saved to EEPROM and RAM and set to item G at the same time.



A : 50 ; AUTO
B : 50 ; EXPOSURE1
C : 50 ; EXPOSURE2
D : 50 ; EXPOSURE3

46-42

Purpose : Adjustment

Function (Purpose) : Used to execute the FAX exposure adjustment (Fine text). (Only when FAX is installed)

Section : MFP/FAX

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.
   * When [C] key is pressed, the entered value is cleared.
3) When [EXECUTE] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM. Printing for the adjustment is started.

   After completion of printing, [EXECUTE] button returns to the normal display.
   * When [↑], [↓], [OK] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.
   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

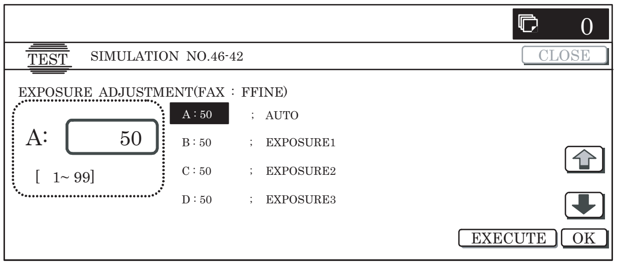
<Set range and default value of each setup>

Item	Display item & Detail of display		Content		Set range		Default value
A	AUTO		Fine/Auto		1 to 99		50
B	EXPOSURE1		Fine/Exposure 1		1 to 99		50
C	EXPOSURE2		Fine/Exposure 2		1 to 99		50
D	EXPOSURE3		Fine/Exposure 3		1 to 99		50
E	EXPOSURE4		Fine/Exposure 4		1 to 99		50
F	EXPOSURE5		Fine/Exposure 5		1 to 99		50
G	AUTO H_TONE		Fine/Auto/Half tone		1 to 99		50
H	EXPOSURE1 H_TONE		Fine/Exposure 1/Half tone		1 to 99		50
I	EXPOSURE2 H_TONE		Fine/Exposure 2/Half tone		1 to 99		50
J	EXPOSURE3 H_TONE		Fine/Exposure 3/Half tone		1 to 99		50
K	EXPOSURE4 H_TONE		Fine/Exposure 4/Half tone		1 to 99		50
L	EXPOSURE5 H_TONE		Fine/Exposure 5/Half tone		1 to 99		50
M	EXECUTE MODE	AUTO	Print mode	Fine/Auto	1 to 12	1	1 (AUTO)
		EXP1		Fine/Exposure 1		2	
		EXP2		Fine/Exposure 2		3	
		EXP3		Fine/Exposure 3		4	
		EXP4		Fine/Exposure 4		5	
		EXP5		Fine/Exposure 5		6	
		AUTO H_TONE		Fine/Auto/Half tone		7	
		EXP1 H_TONE		Fine/Exposure 1/Half tone		8	
		EXP2 H_TONE		Fine/Exposure 2/Half tone		9	
		EXP3 H_TONE		Fine/Exposure 3/Half tone		10	
		EXP4 H_TONE		Fine/Exposure 4/Half tone		11	
		EXP5 H_TONE		Fine/Exposure 5/Half tone		12	

* Items M are displayed as "Display item : Detail of display."
  Example: EXECUTE MODE: AUTO

<Reflection to item M after settlement of the values>

When [EXECUTE] button is pressed after changing and settlement of the exposure adjustment values A to L, the data are saved to EEPROM and RAM and reflected to item M at the same time.



46-43

Purpose : Adjustment

Function (Purpose) : Used to execute the FAX exposure adjustment (Super Fine). (Only when FAX is installed)

Section : MFP/FAX

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.
   * If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   * When [C] key is pressed, the entered value is cleared.
3) When [EXECUTE] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM. Printing for the adjustment is started.

   After completion of printing, [EXECUTE] button returns to the normal display.
   * When [↑], [↓], [OK] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.
   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

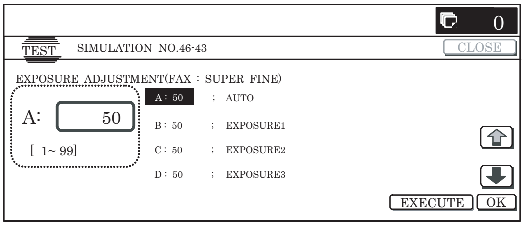
<Set range and default value of each setup>

Item	Display item & Detail of display		Content		Set range		Default value
A	AUTO		Super Fine/Auto		1 to 99		50
B	EXPOSURE1		Super Fine/Exposure 1		1 to 99		50
C	EXPOSURE2		Super Fine/Exposure 2		1 to 99		50
D	EXPOSURE3		Super Fine/Exposure 3		1 to 99		50
E	EXPOSURE4		Super Fine/Exposure 4		1 to 99		50
F	EXPOSURE5		Super Fine/Exposure 5		1 to 99		50
G	AUTO H_TONE		Super Fine/Auto/Half tone		1 to 99		50
H	EXPOSURE1 H_TONE		Super Fine/Exposure 1/Half tone		1 to 99		50
I	EXPOSURE2 H_TONE		Super Fine/Exposure 2/Half tone		1 to 99		50
J	EXPOSURE3 H_TONE		Super Fine/Exposure 3/Half tone		1 to 99		50
K	EXPOSURE4 H_TONE		Super Fine/Exposure 4/Half tone		1 to 99		50
L	EXPOSURE5 H_TONE		Super Fine/Exposure 5/Half tone		1 to 99		50
M	EXE-CUTE MODE	AUTO	Print mode	Super Fine/Auto	1 to 12	1	1 (AUTO)
		EXP1		Super Fine/Exposure 1		2	
		EXP2		Super Fine/Exposure 2		3	
		EXP3		Super Fine/Exposure 3		4	
		EXP4		Super Fine/Exposure 4		5	
		EXP5		Super Fine/Exposure 5		6	
		AUTO H_TONE		Super Fine/Auto/Half tone		7	
		EXP1 H_TONE		Super Fine/Exposure 1/Half tone		8	
		EXP2 H_TONE		Super Fine/Exposure 2/Half tone		9	
		EXP3 H_TONE		Super Fine/Exposure 3/Half tone		10	
		EXP4 H_TONE		Super Fine/Exposure 4/Half tone		11	
		EXP5 H_TONE		Super Fine/Exposure 5/Half tone		12	

* Items M are displayed as "Display item: Detail of display."
Example: EXECUTE MODE: AUTO

<Reflection to item M after settlement of the values>

When [EXECUTE] button is pressed after changing and settlement of the exposure adjustment values A to L, the data are saved to EEPROM and RAM and reflected to item M at the same time.



EXPOSURE ADJUSTMENT(FAX : SUPER FINE)

A: 50
[1~ 99]

A : 50 ; AUTO
B : 50 ; EXPOSURE1
C : 50 ; EXPOSURE2
D : 50 ; EXPOSURE3

46-44

Purpose : Adjustment

Function (Purpose) : Used to execute the FAX exposure adjustment (Ultra Fine). (Only when FAX is installed)

Section : MFP/FAX

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.
   The highlighted set value is switched and the value is displayed in the setting area.
   * If there is any item over [↑], an active display is made and item is shifted.
     If there is no item over [↑], the display grays out and the operation is invalid.
     If there is any item under [↓], an active display is made and item is shifted.
     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   * When [C] key is pressed, the entered value is cleared.
3) When [EXECUTE] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM. Printing for the adjustment is started.
   After completion of printing, [EXECUTE] button returns to the normal display.
   * When [↑], [↓], [OK] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.
   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

<Set range and default value of each setup>

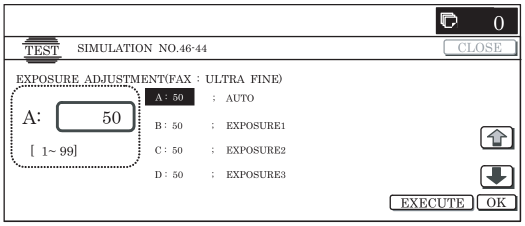
Item	Display item & Detail of display	Content	Default value	Default value
A	AUTO	Ultra Fine/Auto	1 to 99	50
B	EXPOSURE1	Ultra Fine/Exposure 1	1 to 99	50
C	EXPOSURE2	Ultra Fine/Exposure 2	1 to 99	50
D	EXPOSURE3	Ultra Fine/Exposure 3	1 to 99	50
E	EXPOSURE4	Ultra Fine/Exposure 4	1 to 99	50
F	EXPOSURE5	Ultra Fine/Exposure 5	1 to 99	50
G	AUTO H_TONE	Ultra Fine/Auto/Half tone	1 to 99	50
H	EXPOSURE1 H_TONE	Ultra Fine/Exposure 1/Half tone	1 to 99	50
I	EXPOSURE2 H_TONE	Ultra Fine/Exposure 2/Half tone	1 to 99	50
J	EXPOSURE3 H_TONE	Ultra Fine/Exposure 3/Half tone	1 to 99	50
K	EXPOSURE4 H_TONE	Ultra Fine/Exposure 4/Half tone	1 to 99	50
L	EXPOSURE5 H_TONE	Ultra Fine/Exposure 5/Half tone	1 to 99	50

Item	Display item & Detail of display		Content		Default value		Default value
M	EXECUTE MODE	AUTO	Print mode	Ultra Fine/Auto	1 to 12	1	1 (AUTO)
		EXP1		Ultra Fine/Exposure 1		2	
		EXP2		Ultra Fine/Exposure 2		3	
		EXP3		Ultra Fine/Exposure 3		4	
		EXP4		Ultra Fine/Exposure 4		5	
		EXP5		Ultra Fine/Exposure 5		6	
		AUTO H_TONE		Ultra Fine/Auto/Half tone		7	
		EXP1 H_TONE		Ultra Fine/Exposure 1/Half tone		8	
		EXP2 H_TONE		Ultra Fine/Exposure 2/Half tone		9	
		EXP3 H_TONE		Ultra Fine/Exposure 3/Half tone		10	
		EXP4 H_TONE		Ultra Fine/Exposure 4/Half tone		11	
		EXP5 H_TONE		Ultra Fine/Exposure 5/Half tone		12	

* Items M are displayed as "Display item: Detail of display."
Example: EXECUTE MODE: AUTO

<Reflection to item M after settlement of values>

When [EXECUTE] key is pressed after changing and settlement of exposure adjustment values A to L, the data are saved to EEPROM and RAM and set to item M at the same time.



EXPOSURE ADJUSTMENT(FAX : ULTRA FINE)

A: 50

[1~ 99]

A : 50 ; AUTO
B : 50 ; EXPOSURE1
C : 50 ; EXPOSURE2
D : 50 ; EXPOSURE3

46-45

Purpose : Adjustment

Function (Purpose) : Used to execute the FAX exposure level adjustment and the individual setting (600DPI). (Only when FAX is installed)

Section : FAX

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * When [C] key is pressed, the entered value is cleared.

3) When [EXECUTE] button is pressed, it is highlighted and the current set value is saved to EEPROM and RAM. Printing for the adjustment is started.

   After completion of printing, [EXECUTE] button returns to the normal display.

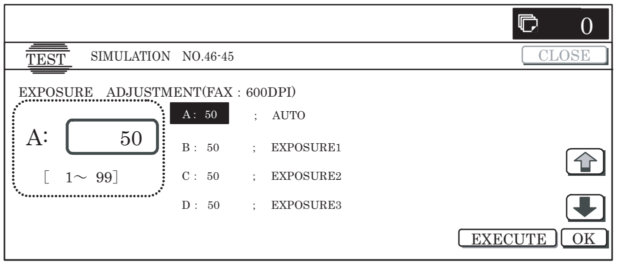
* When [↑], [↓], [OK] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

  * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

<Set range and default value of each setup>

Item	Display item & Detail of display		Content		Set range		Default value
A	AUTO		600dpi/Auto		1 to 99		50
B	EXPOSURE1		600dpi/Exposure 1		1 to 99		50
C	EXPOSURE2		600dpi/Exposure 2		1 to 99		50
D	EXPOSURE3		600dpi/Exposure 3		1 to 99		50
E	EXPOSURE4		600dpi/Exposure 4		1 to 99		50
F	EXPOSURE5		600dpi/Exposure 5		1 to 99		50
G	AUTO H_TONE		600dpi/Auto/Half tone		1 to 99		50
H	EXPOSURE1 H_TONE		600dpi/Exposure 1/Half tone		1 to 99		50
I	EXPOSURE2 H_TONE		600dpi/Exposure 2/Half tone		1 to 99		50
J	EXPOSURE3 H_TONE		600dpi/Exposure 3/Half tone		1 to 99		50
K	EXPOSURE4 H_TONE		600dpi/Exposure 4/Half tone		1 to 99		50
L	EXPOSURE5 H_TONE		600dpi/Exposure 5/Half tone		1 to 99		50
M	EXECUTE MODE	AUTO	Print mode	600dpi/Auto	1 to 12	1	1 (AUTO)
		EXP1		600dpi/Exposure 1		2	
		EXP2		600dpi/Exposure 2		3	
		EXP3		600dpi/Exposure 3		4	
		EXP4		600dpi/Exposure 4		5	
		EXP5		600dpi/Exposure 5		6	
		AUTO H_TONE		600dpi/Auto/Half tone		7	
		EXP1 H_TONE		600dpi/Exposure 1/Half tone		8	
		EXP2 H_TONE		600dpi/Exposure 2/Half tone		9	
		EXP3 H_TONE		600dpi/Exposure 3/Half tone		10	
		EXP4 H_TONE		600dpi/Exposure 4/Half tone		11	
		EXP5 H_TONE		600dpi/Exposure 5/Half tone		12	

* Items M are displayed as "Display item: Detail of display."
Example: EXECUTE MODE: AUTO



TEST SIMULATION NO.46-45

EXPOSURE ADJUSTMENT(FAX : 600DPI)

A: 50

[1～ 99]

A : 50 ; AUTO
B : 50 ; EXPOSURE1
C : 50 ; EXPOSURE2
D : 50 ; EXPOSURE3

46-47

Purpose : Setting

Function (Purpose) : Used to set the JPEG compression rate in Copy/Scanner (PUSH SCAN).

Section : —

Item : Setting

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

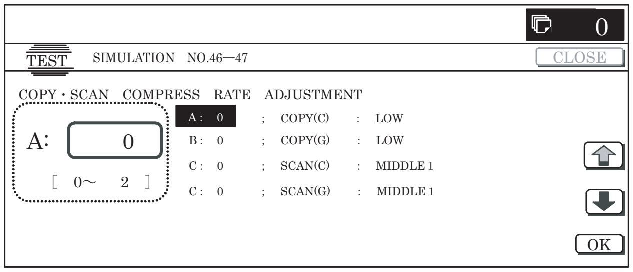
2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.

<Set range and default value of each setup>

Category	Item	Display		Content	Set range	Default value
COPY (COLOR)	A	COPY (C)	LOW	Low compression (Color)	0	0 (LOW)
			MIDDLE	Middle compression (Color)	1	
			HIGH	High compression (Color)	2	
COPY (GRAY)	B	COPY (G)	LOW	Low compression (Gray)	0	0 (LOW)
			MIDDLE	Middle compression (Gray)	1	
			HIGH	High compression (Gray)	2	
PUSH SCAN (COLOR)	C	SCAN (C)	MIDDLE1	Middle compression mode 1, for compression, Q table (for brightness, color difference)	0	0 (MIDDLE1)
				Middle compression mode 1, for decompression, Q table (for brightness, color difference)		
			MIDDLE2	Middle compression mode 2, for compression, Q table (for brightness, color difference)	1	
				Middle compression mode 2, for decompression, Q table (for brightness, color difference)		
			MIDDLE3	Middle compression mode 3, for compression, Q table	2	
				Middle compression mode 3, for decompression, Q table		
PUSH SCAN (GRAY)	D	SCAN (G)	MIDDLE1	Middle compression mode 1, for compression, Q table	0	0 (MIDDLE1)
				Middle compression mode 1, for decompression, Q table		
			MIDDLE2	Middle compression mode 2, for compression, Q table	1	
				Middle compression mode 2, for decompression, Q table		
			MIDDLE3	Middle compression mode 3, for compression, Q table	2	
				Middle compression mode 3, for decompression, Q table		



TEST SIMULATION NO.46—47

COPY・SCAN COMPRESS RATE ADJUSTMENT

A: 0

[0～ 2]

A : 0 ; COPY(C) : LOW
B : 0 ; COPY(G) : LOW
C : 0 ; SCAN(C) : MIDDLE 1
C : 0 ; SCAN(G) : MIDDLE 1

48

48-1

Purpose : Adjustment

Function (Purpose) : Used to execute the magnification adjustment in the scan system (for RSPF).

Section : RSPF/Scanner

Item : Image quality (Size/magnification ratio)

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

   * Copying can be performed also by pressing [COLOR]/[BLACK] key.

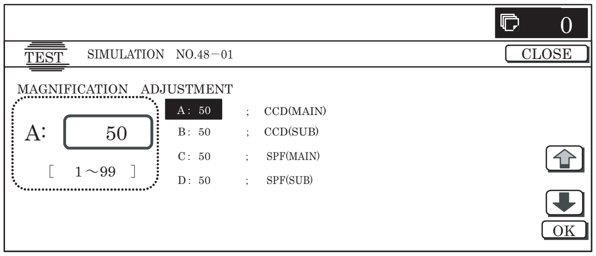
   * When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

<Set range and default value of each setup>

Item	Display	Content	Set range	Default value
A	CCD (MAIN)	SCAN, main scan magnification ratio adjustment (CCD)	1 to 99	50
B	CCD (SUB)	SCAN, sub scan magnification ratio adjustment (CCD)	1 to 99	50
C	SPF (MAIN)	RSPF document front surface magnification ratio adjustment (Main scan)	1 to 99	50
D	SPF (SUB)	RSPF document front surface magnification ratio adjustment (Sub scan)	1 to 99	50
E	SPFB (MAIN)	RSPF document back surface magnification ratio adjustment (Main scan)	1 to 99	50
F	SPFB(SUB)	RSPF document back surface magnification ratio adjustment (Sub scan)	1 to 99	50

* When the set value is increased by 1, the magnification ratio is increased by 0.02%.

* This adjustment affects PC scanning and other scanning other than copy.



SIMULATION NO.48−01

MAGNIFICATION ADJUSTMENT

A: 50

[1～99]

A : 50 ; CCD(MAIN)
B : 50 ; CCD(SUB)
C : 50 ; SPF(MAIN)
D : 50 ; SPF(SUB)

48-5

Purpose : Adjustment

Function (Purpose) : This adjustment is executed when a satisfactory result is not obtained when a different copy magnification ratio is specified and copying is made after adjustment of the sub scanning direction image magnification ratio with SIM 48-1.

When there is an error in the copy magnification ratio in reduction copy, the adjustment value of high speed mode is adjusted.

When there is an error in the copy magnification ratio in enlargement copy, the adjustment value of low speed mode is adjusted. This is the magnification ratio adjustment in the scan system.

Section : RSPF/Scanner

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

<Set range and default value of each setup>

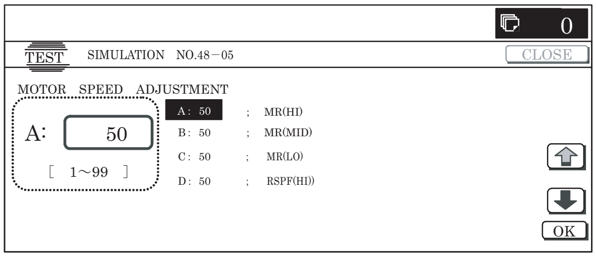
Item	Display	Content	Set range	Default value
A	MR (HI)	Scanner motor (High speed)	1 to 99	50
B	MR (MID)	Scanner motor (Reference speed)	1 to 99	50
C	MR (LO)	Scanner motor (Low speed)	1 to 99	50
D	RSPF (HI)	Document feed (SPF) motor (High speed)	1 to 99	50
E	RSPF (MID)	Document feed (SPF) motor (Reference speed)	1 to 99	50
F	RSPF(LO)	Document feed (SPF) motor (Low speed)	1 to 99	50

<Reference speed>

HI=248mm/sec

MID=157mm/sec

LO=78.5mm/sec



SIMULATION NO.48−05

MOTOR SPEED ADJUSTMENT

A: 50

[1～99]

A : 50 ; MR(HI)
B : 50 ; MR(MID)
C : 50 ; MR(LO)
D : 50 ; RSPF(HI))

48-6

Purpose : Adjustment

Function (Purpose) : Used to adjust the rotating speed of each motor.

Section :

Item : Adjustment

Operation/Procedure

1) Select a mode to be set.

   * When [COLOR], [MONO], or [HEAVY] button is selected, the selected button is highlighted and the set item of the selected mode is displayed.

     Only one button can be selected.

     In the initial state, [COLOR] is selected.

2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

4) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.

   The correction value of the specified motor is changed. The smaller the correction value is, the slower the speed is, and vice versa. When the value is changed by 1, the speed is changed by 0.1%.

- * Copying can be performed also by pressing [COLOR]/[BLACK] key.
- * When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

<Set range and default value of each setup>

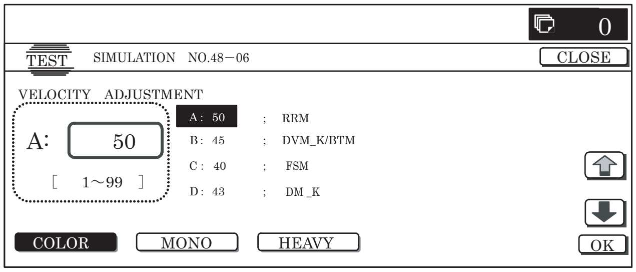
Item	Display	Content	Mode select		Set range	Default value
A	RRM	Resist motor correction value	Color	COLOR	1 to 99	50
			Monochrome	MONO		
			Heavy paper	HEAVY		54
B	DVM_K/ BTM	Developing K motor correction value	Color	COLOR	1 to 99	45
			Monochrome	MONO		
			Heavy paper	HEAVY		
C	FSM	Fusing motor correction value	Color	COLOR	1 to 99	37
			Monochrome	MONO		
			Heavy paper	HEAVY		43
D	DM_K	Drum K motor correction value	Color	COLOR	1 to 69	43
			Monochrome	MONO		
			Heavy paper	HEAVY		
E	DM_CL	Drum CL motor correction value	Color	COLOR	1 to 69	43
			Heavy paper	HEAVY		
F	PFM	Transport motor correction value		COLOR *1	1 to 99	50
G	POM	Paper exit motor correction value		COLOR *1	1 to 99	50
H	FUSER SETTING	Fusing speed switch timing		HEAVY	1 to 99	50

*1: Common to COLOR, MONO, and HEAVY paper. The item is displayed only when COLOR button is highlighted.

- * Since the belt is driven in cooperation with the developing K motor (DVM-K) in this machine, the DVM-K also serves as the belt motor (BTM).
- * Adjustment value

  The greater the correction value is, the higher the speed is, and vice versa. When the value is changed by 1, the speed is changed by about 0.1%.
- * Paper size detection method for fusing motor (FSM) normal paper

  A3W, A3, WLT, EXTRA, USER EXTRA (420mm or above) are large sizes.



A: 50

[1～99]

A : 50 ; RRM
B : 45 ; DVM_K/BTM
C : 40 ; FSM
D : 43 ; DM _K

49

49-1

Purpose : Version-up
Function (Purpose) : Used to execute the firmware update.
Section : —
Item : Adjustment

Operation/Procedure

NOTE: To update the firmware, set DIP SW 2 on the MFP control PWB to ON.

1) Insert the USB memory into the machine.
   - * When USB is not connected, "INSERT A STORAGE FIRMWARE STORED ON" is displayed. When [OK] button is pressed, the display is shifted to the folder or file selection screen.
2) When a firmware update folder or file button is pressed, the display is shifted to the firmware update screen.
   - * The number of buttons depends on the number of files in the inserted USB memory.

     A folder name or file name is displayed on the button.

     If the folder name or file name is of more than 34 characters, only 34 characters are displayed.

     For a folder name, "<DIR>" is displayed at the head.
   - * When [..] button is pressed on the file selection screen, the display is shifted to the folder or file selection screen. On the folder or file selection screen, the keys are disabled.
   - * The path of the folder or file is displayed on the title section.

     If the path is of more than 50 characters, only 50 characters are displayed.
3) The current version and the update version are displayed for each firmware.
4) When a button of the firmware to be updated is selected, it is highlighted.
   - * When the selected button is pressed again, its selection is canceled (normal display).
   - * When [ALL] button is pressed, all the buttons are selected and highlighted.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     When there is a page under [↓], the display becomes active and the page is shifted down.When there is no page under [↓], the display grays out and the operation is invalid.
5) Press [EXECUTE] button.

   [EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out display to active display.
   - * If no firmware button is selected, [EXECUTE] button is disabled.
6) Press [YES] button.

   [YES] button is highlighted, and update of the selected firmware is executed.
   - * When [NO] and [EXECUTE] button are pressed, the display returns to the firmware select screen. At that time, the selected firmware remains highlighted, and [EXECUTE] button returns to the normal display.
7) After completion of update, the result is displayed.

   When the operation is completed normally, "COMPLET" is displayed. In case of an error, "ERROR" and the firmware where the error occurred are displayed.

- * The operation cannot be interrupted midway.
- * When [OK] button is pressed, the machine is rebooted.
- * When [CA] key is pressed on the folder or file selection screen or the file selection screen, the simulation is terminated.
- * When [SYSTEM SETTINGS] key is pressed on the folder or file selection screen or the file selection screen, the display returns to the sub code entry screen.
- * When [CA] key or [SYSTEM SETTINGS] key is pressed to exit the simulation on the file version display screen and the following screens before execution, the machine is rebooted.

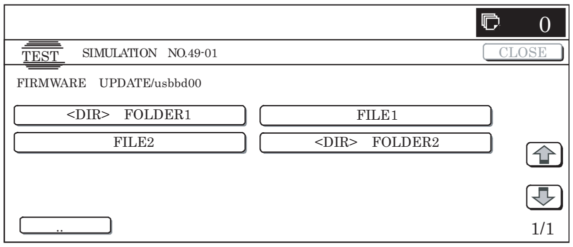
<Update target data firmware>

Display item	Item description	Number of digits
CONFIG	Configuration data	8 digits
ICU (MAIN)	ICU main section former half	8 digits
ICU (BOOTM)	ICU boot section main	8 digits
ICU (BOOTS)	ICU boot section sub	8 digits
LANGUAGE	Language support data program (Generic name)	8 digits
GRAPHIC	Graphic data for L-LCD	8 digits
SLIST	SLIST data for L-LCD	8 digits
PCU (BOOT)	PCU boot section	8 digits
PCU (MAIN)	PCU main section	8 digits
DESK (BOOT)	Desk unit boot section	8 digits
DESK (MAIN)	Desk unit main section	8 digits
A4LCC (BOOT)	Side LCC (A4) boot section	8 digits
A4LCC (MAIN)	Side LCC (A4) main section	8 digits
FIN (BOOT)	Inner finisher boot section	8 digits
FIN (MAIN)	Inner finisher main section	8 digits
INSERTER (BOOT)	Inserter boot section *1	
INSERTER (MAIN)	Inserter main section *1	
1KFIN (BOOT)	1K Finisher boot section	8 digits
1KFIN (MAIN)	1K Finisher main section	8 digits
4KFIN (BOOT)	4K Finisher boot section *1	
4KFIN (MAIN)	4K Finisher main section *1	
A3LCC (BOOT)	Side LCC (A3) boot section *1	
A3LCC (MAIN)	Side LCC (A3) main section *1	
SCU (BOOT)	SCU	8 digits
SCU (MAIN)	Main section	8 digits
DSPF (BOOT)	DSPF boot section *1	
DSPF (MAIN)	DSPF main section *1	
FAX1 (BOOT)	FAX1 line (Boot section)	8 digits
FAX1 (MAIN)	FAX1 line (Main section)	8 digits
FAX OPTION (BOOT)	FAX2 line (Boot section)	8 digits
FAX OPTION (MAIN)	FAX2 line (Main section)	8 digits
ESCP_FONT	ESC/P fonts	8 digits
PDL_FONT	PDL fonts	8 digits
ANIMATION	Animation data	8 digits
IMAGE_DATA	Image ASIC data	8 digits
COLOR PROFILE	Color profile	8 digits

*1: Not supported for the MX-2300/2700 series.

<List of error display in case of error end>

Display item	Item description
CONF	Configuration data
ICUM	ICU main section former half
ICUBM	ICU boot section main
ICUBS	ICU boot section sub
LANG	Language support data program (Generic name)
GRAPH	Graphic data for L-LCD
SLIST	SLIST data for L-LCD
PCUB	PCU Boot section
PCUM	PCU main section
DESKB	Desk unit Boot section
DESKM	Desk unit main section
LCC4B	Side LCC(A4) Boot section
LCC4M	Side LCC(A4) main section
FINB	Inner Finisher Boot section
FINM	Inner Finisher main section
FIN1B	1K Finisher Boot section
FIN1M	1K Finisher main section
SCUB	SCU
SCUM	Main section
FAXB	FAX1 Boot section
FAXM	FAX1 main section
FAXOPB	FAX2 Boot section
FAXOPM	FAX2 main section
ESCP	ESC/P fonts
PDL	PDL fonts
ANIME	Animation data
IMGDT	Image ASIC data



49-3

Purpose : Version-up

Function (Purpose) : The Operation Manual saved in the hard disk is updated.

Section : —

Item : Adjustment

Operation/Procedure

1) Insert the USB memory into the machine.
   - * When USB is not connected, "INSERT A STORAGE E-MANUAL STORED ON" is displayed. When [OK] button is pressed, the display is shifted to the folder selection screen 1.
2) When a operation manual update folder button is pressed, the display is shifted to the operation manual update screen.
   - * A folder name is displayed on the button.
   - * "<DIR>" is displayed at the head.

     If the folder name is of more than 34 characters, only 34 characters are displayed.
   - * When [..] button is pressed on the folder selection screen 2, the display is shifted to the folder selection screen 1. On the folder or file selection screen, the keys are disabled.
   - * The path of the folder or file is displayed on the title section.

     If the path is of more than 50 characters, only 50 characters are displayed.
3) The current version and the update version are displayed.
4) Press [EXECUTE] button.

   [EXECUTE] button is highlighted, and [YES] and [NO] buttons are changed from gray-out display to active display.
5) Press [YES] button.

   [YES] button is highlighted, and update of the selected operation manual is executed.
   - * When [NO] and [EXECUTE] button are pressed, the display returns to the version display screen.
6) After completion of update, the result is displayed.

   When the operation is completed normally, "COMPLET" is displayed. In case of an error, "ERROR" is displayed.

* When [CA] key or [SYSTEM SETTING] key is pressed during execution, the operation is interrupted and the machine is rebooted.

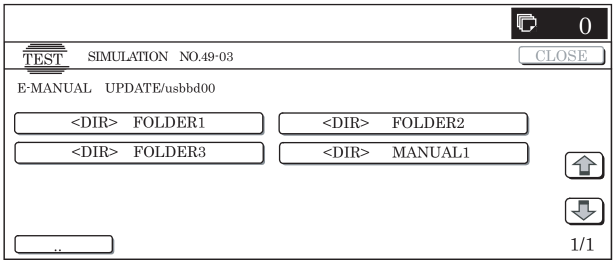
* When [OK] button is pressed, the machine is rebooted.

* When [CA] key is pressed on the folder selection screen 1 and 2, the simulation is terminated.

* When [SYSTEM SETTINGS] key is pressed on the folder selection screen 1 and 2, the display returns to the sub code entry screen.

* When [CA] key or [SYSTEM SETTINGS] key is pressed to exit the simulation on the version display screen and the following screens before execution, the machine is rebooted.

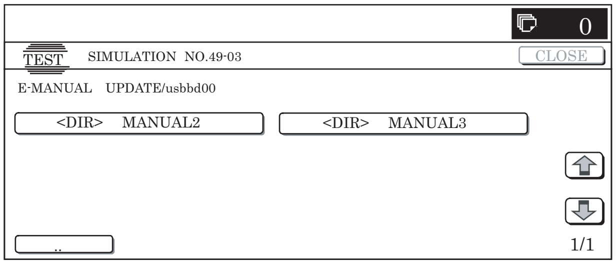
<Folder selection screen 1>



SIMULATION NO.49-03

E-MANUAL UPDATE/usbbd00

<Folder selection screen 2>



SIMULATION NO.49-03

E-MANUAL UPDATE/usbbd00

50

50-1

Purpose : Adjustment

Function (Purpose) : Used to adjust the copy image position on print paper in the copy mode and to adjust the void area (image loss). (The similar adjustment can be executed with SIM50-05 and 50-02 (Simple method). (Document table mode))

Section : —

Item : Image quality (Image position)

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

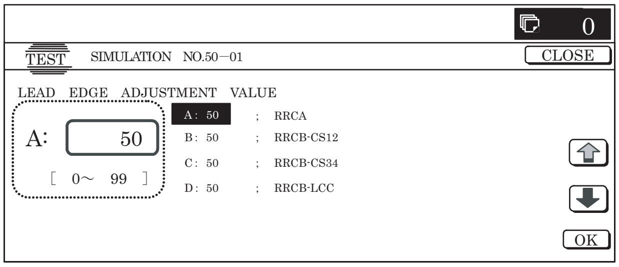
3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

   * When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

   * Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display item		Description		Set range	Default value
A	Lead edge adjustment value	RRCA	Document lead edge reference position (OC) The timing from start of document scan to recognition of the image lead edge is adjusted. (0.1mm/step) * The smaller the set value is, the faster the timing is. The greater the set value is, the slower the timing is.		0 to 99	50
B		RRCB-CS12	Resist motor ON timing adjustment The timing to turn ON the resist roller from reception of the resist signal is adjusted. (0.1mm/step) * The smaller the set value is, the faster the timing is. The greater the set value is, the slower the timing is.	Standard cassette	1 to 99	50
C		RRCB-CS34		Desk	1 to 99	50
D		RRCB-LCC		LCC	1 to 99	50
E		RRCB-MFT		Manual feed	1 to 99	50
F		RRCB-ADU		ADU	1 to 99	50
G	Image loss quantity set value	LEAD	Lead edge image loss quantity setting The lead edge image loss quantity is specified. The difference between the document lead edge scan start position and the document lead edge (0.1mm/step)) * The greater the value is, the grater the image loss is.		0 to 99	30
H		SIDE	Side image loss quantity setting The side image loss quantity is specified. (Document width – Document edge scan range) / 2 (0.1mm/step) (The rear edge image loss quantity is fixed to 0. (Without adjustment)) * The greater the value is, the greater the image loss is.		0 to 99	20
I	Void amount setting	DENA	Print lead edge adjustment The void quantity formed at the paper lead edge is specified. (0.1mm/step) * The greater the value is, the greater the void is.		1 to 99	30
J		DENB	Sub scan direction print range adjustment The void quantity formed at the paper rear edge is specified. (0.1mm/step) * The greater the value is, the greater the void is.		1 to 99	20
K		FRONT/REAR	FRONT/REAR void amount adjustment The void quantities formed at the right and left edges are adjusted. (0.1mm/step) * The greater the value is, the greater the void is.		1 to 99	20



SIMULATION NO.50−01

LEAD EDGE ADJUSTMENT VALUE

A: 50

[0～ 99]

A : 50 ; RRCA
B : 50 ; RRCB-CS12
C : 50 ; RRCB-CS34
D : 50 ; RRCB-LCC

50-2

Purpose : Adjustment

Function (Purpose) : Used to adjust the copy image position on print paper in the copy mode and to adjust the void area (image loss). (Simple adjustment)

(Similar to SIM50-01. This simulation provides the simpler method.)

Section : –

Item : Image quality (Image position)

Operation/Procedure

1) In advance to this adjustment, execute the magnification ratio adjustment in the sub scanning direction (SIM48-01).
2) Select "TRAY"and set 0 to L1 and L2.
   * L1 and L2 are changed to 0, the following adjustment values are automatically set.
     RRCA adjustment value: 50
     RRCB adjustment value: 90
     （基準 50 から用紙先行 49(4,9mm) をたした値）
3) Place a ruler along the left edge of the document table, and make a black copy in 400%.
4) コピーされた画像を測定し、それぞれ距離Ｌ１,Ｌ２を０.１mm単位で測定し１０倍した値を入力する。
   Ｌ１、Ｌ２は必ず１セットで入力すること。
   - L1: Distance between the copy image lead edge position and the scale of 10mm.
   - L2: Distance between the paper lead edge and the copy image lead edge position.

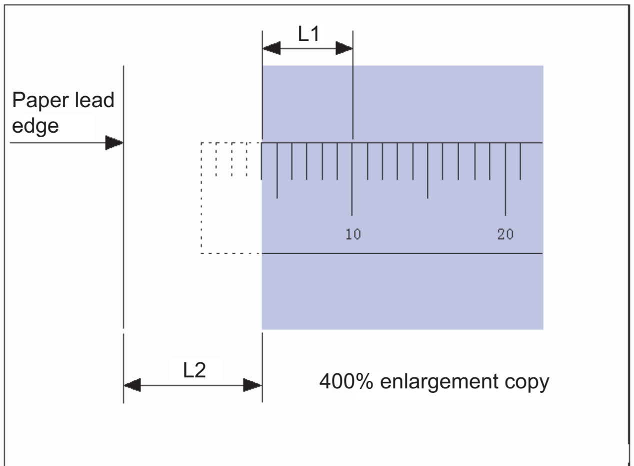


Fig. 1

5) When [EXECUTE] button is pressed, the current entered value is saved to EEPROM and RAM.
6) Make a black copy in 100%, and adjust the rear edge void.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

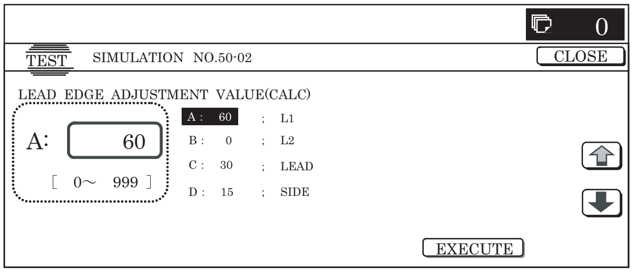
Item	Display item		Description	Set range	Default value
A	Actual measured value	L1	Distance between the image lead edge and the scale of 10mm (Platen 400%, unit of 0.1mm)	0 to 999	–
B		L2	Distance between the paper lead edge and the image lead edge (unit of 0.1mm)	0 to 999	–
C	Image loss quantity set value	LEAD	Lead edge image loss quantity setting The lead edge image loss quantity is specified. Difference between the document lead edge scan start position and the document lead edge * The greater the value is, the greater the image loss is.	0 to 99	30
D		SIDE	Side image loss quantity setting The side image loss (SIDE) is specified. (Document width – Document edge scan range / 2 (The rear edge image loss quantity is fixed to 0. (Without adjustment)) * The greater the value is, the greater the image loss is.	0 to 99	20
E	Void quantity setting	DENA	Print lead edge adjustment The void quantity at the paper lead edge is specified. * The greater the value is, the greater the void is.	1 to 99	30
F		DENB	Sub scanning direction print range adjustment The void quantity at the paper rear edge is specified. * The greater the value is, the greater the void is.	1 to 99	20
G		FRONT/REAR	FRONT/REAR void quantity adjustment The void quantities at the left and right edges of paper are specified. * The greater the value is, the greater the void is.	1 to 99	20

A to G:1step = 0.1mm

A. Document lead edge reference position: (L1), B. Paper lead edge positions

Except for A and B, same as the item adjusted with SIM50-01.

The values adjusted with A and B are reflected to the document lead edge reference position (RRC-A) and all the paper lead edge positions (RRCB-**).



SIMULATION NO.50-02

LEAD EDGE ADJUSTMENT VALUE(CALC)

A: 60

[0～ 999]

A : 60 ; L1
B : 0 ; L2
C : 30 ; LEAD
D : 15 ; SIDE

50-5

Purpose : Adjustment

Function (Purpose) : Used to set the lead edge adjustment value which affects only the printer print.

Section : Printer

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * When [C] key is pressed, the entered value is cleared.

3) When [EXECUTE] button is pressed, it is highlighted and printing for adjustment is started with the current set value.

   After completion of printing, [EXECUTE] button returns to the normal display.

   * When [↑], [↓], [OK], [EXECUTE] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

   * When the machine returns to the ready state after occurrence of an interruption, self print is resumed.

4) Check the adjustment pattern image position.

   Measure the dimensions of void area in the right and the left frame direction of the adjustment pattern to check that the dimensions are as follows:

   If DEN-C = 3.0 ± 2.0mm and DEN-B = 3.0 ± 2.0mm, there is no need to adjust.

   If the values are as shown above, there is no need to adjust.

   If not, go to step 5.

5) Change the adjustment values of A (DEN-C) and B (DEN-B).

   When the adjustment value of A (DEN-A) is decreased by 1, the sub scanning direction print start position is shifted toward the paper lead edge by 0.1mm.

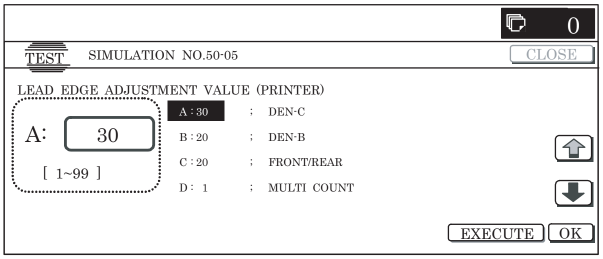
   When the adjustment value of B (DEN-B) is decreased by 1, the paper transport direction print range is extended toward the rear edge by 0.1mm.

6) Repeat steps 1 to 5 until the conditions of step 4 are satisfied.

<Description of item>

Item	Display item & Detail of display		Description of item		Set range		Default value	Remark
A	DEN-C		Printer print lead edge adjustment		1 to 99		30	Adjustment value to fit with the print lead edge for the printer. When the adjustment value of this item is decreased by 1, the printer print start position is shifted toward the lead edge in the paper transport direction by 0.1mm.
B	DEN-B		Sub scanning direction print range adjustment		1 to 99		20	Void quantity formed at the paper rear edge. When the adjustment value of Item B (DEN-B) is decreased by 1, the sub scanning direction print range adjustment value in the paper transport direction is decreased by 0.1mm.
C	FRONT/REAR		FRONT/REAR void quantity adjustment		1 to 99		20	Adjustment of void quantity formed at the right and left edges of paper. The greater the value is, the greater the void quantity is.
D	MULTI COUNT		Print quantity		1 to 99		1	
E	PAPER	MFT	Cassette select	Manual feed	1 to 6	1	2 (CS1)	
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
F	DUPLEX	YES	Duplex print select	Selected	0 to 1	0	1 (NO)	
		NO		Not selected		1		

* Items E and F are displayed as "Display item: Detail of display."
Example: PAPER:CS1



SIMULATION NO.50-05

LEAD EDGE ADJUSTMENT VALUE (PRINTER)

A: 30

[1~99]

A : 30 ; DEN-C
B : 20 ; DEN-B
C : 20 ; FRONT/REAR
D : 1 ; MULTI COUNT

50-6

Purpose : Adjustment

Function (Purpose) : Used to adjust the copy image position on the print paper in the copy mode and to adjust the void area (image loss). (The similar adjustment can be executed with SIM50-7 (Simple method).) (RSPF mode)

Section : RSPF

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

If there is any item under [↓], an active display is made and item is shifted.

If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

* Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, it is highlighted and the currently entered data are saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

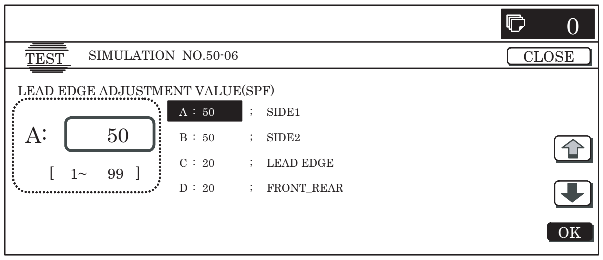
Item	Display item		Description	Set range	Default value
A	SIDE1		Front surface document scan start position adjustment (CCD)	1 to 99	50
B	SIDE2		Back surface document scan start position adjustment (CCD)	1 to 99	50
C	Image loss quantity setting SIDE1	LEAD_EDGE (SIDE1)	Front surface image loss quantity setting	0 to 99	20
D		FRONT_REAR (SIDE1)	Front surface side image loss quantity setting	0 to 99	20
E		TRAIL_EDGE (SIDE1)	Front surface rear edge image loss quantity adjustment	0 to 99	30
F	Image loss quantity setting SIDE2	LEAD_EDGE (SIDE2)	Back surface image loss quantity setting	0 to 99	20
G		FRONT_REAR (SIDE2)	Back surface side image loss quantity setting	0 to 99	20
H		TRAIL_EDGE (SIDE2)	Back surface rear edge image loss quantity adjustment	0 to 99	30

A,B: The greater the value is, the slower the scan timing is.

The greater the adjustment values of C to H are, the greater the image loss is.

A to H: 1 step = 0.1 m

The RSPF rear edge image loss is provided against shade.



SIMULATION NO.50-06

LEAD EDGE ADJUSTMENT VALUE(SPF)

A: 50

[1~ 99]

A : 50 ; SIDE1
B : 50 ; SIDE2
C : 20 ; LEAD EDGE
D : 20 ; FRONT_REAR

50-7

Purpose : Adjustment

Function (Purpose) : Used to adjust the copy image position on print paper in the copy mode and to adjust the void area (image loss). (The similar adjustment can be executed with SIM50-6 (Simple type).) (RSPF mode)

Section : RSPF

Item : Image quality

Operation/Procedure

1) In advance, execute the SPF sub scanning direction magnification ratio (SIM48-01).

2) Select the set item with [↑] and [↓] buttons.

The highlighted section is and the value is displayed in the setting area.

* If there is any item over [↑], an active display is made and item is shifted.

If there is no item over [↑], the display grays out and the operation is invalid.

If there is any item under [↓], an active display is made and item is shifted.

If there is no item over [↓], the display grays out and the operation is invalid.

3) Set L4 and L5 to 0.

When the values of L4 and L5 are changed to 0, the following adjustment values are automatically set.

Adjustment values of SIDE1, 2: 50

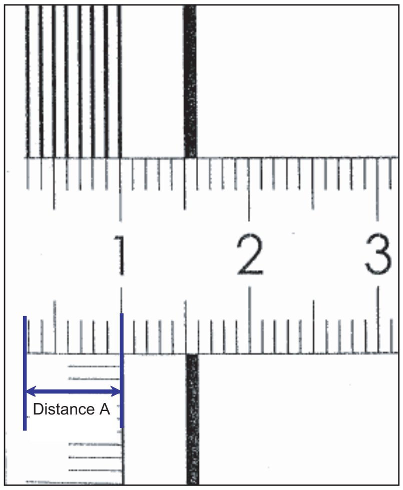
After completion of calculation, the value of L4/L5 returns to 0.

4) Set the magnification ratio to 200%, and press [COLOR] or [BLAC] key to make a copy.

5) Measure the copied image, and enter the measure value of distance A (RSPF) to L4 and L5 in the unit of 0.1mm.

L4 : Distance A (SPF front surface: 200%) (Unit: 0.1mm)

L5 : Distance A (SPF back surface: 200%) (Unit: 0.1mm)



* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Description of item>

Item	Display item	Description of item	Set range	Default value
A	L4	Distance from the front surface image lead edge to the scale of 10mm (SPF 200%, unit 0.1mm)	0 to 999	—
B	L5	Distance from the back surface image lead edge to the scale of 10mm (SPF 200%, unit 0.1mm)	0 to 999	—
C	LEAD_EDGE (SIDE1)	Image loss quantity setting SIDE1	0 to 99	20
D	FRONT_REAR (SIDE1)		0 to 99	20
E	TRAIL_EDGE (SIDE1)		0 to 99	30
F	LEAD_EDGE (SIDE2)	Image loss quantity setting SIDE2	0 to 99	20
G	FRONT_REAR (SIDE2)		0 to 99	20
H	TRAIL_EDGE (SIDE2)		0 to 99	30

A to H: 1step=0.1mm

C to H: When the adjustment value is increased, the image loss is increased.

* It is linked with items C to H of SIM50-6.

<Calculation formula>

SIDE1 adjustment value: $\text{Old set value} - \left(\frac{\text{L4} - \text{Correction value}^{*1}}{2^{*2}}\right)$

SIDE2 adjustment value: $\text{Old set value} + \left(\frac{\text{L5} - \text{Correction value}^{*1}}{2^{*2}}\right)$

^{*1}: Correction value = (Measurement reference 10mm – Lead edge image loss set value) x 10 x (Magnification ratio/100)

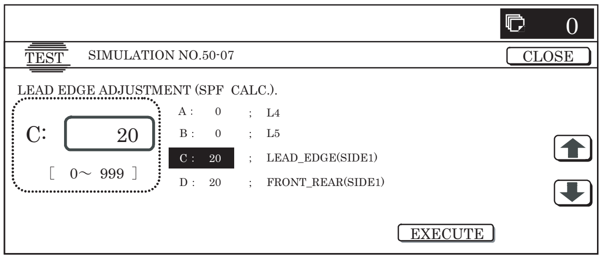
計算例：140 = (100 – 30) x 10 x (200%/100)

^{*2}: 2 = (Magnification ratio 200%/100)

L4 = 0 の場合、SIDE1 の計算を行わない。L5 の調整値は行う。

L5 = 0 の場合、SIDE2 の計算を行わない。L4 の調整値は行う。

L4/L5 双方 = 0 の場合、SIDE1, 2 調整値は初期値が入る。



SIMULATION NO.50-07

LEAD EDGE ADJUSTMENT (SPF CALC.).

C: 20

[0～ 999]

A : 0 ; L4
B : 0 ; L5
C : 20 ; LEAD_EDGE(SIDE1)
D : 20 ; FRONT_REAR(SIDE1)

50-10

Purpose : Adjustment

Function (Purpose) : Used to adjust the print off-center for each tray.

Image print center position adjustment (Adjusted for each paper feed section.)

Section : –

Item : Image quality (Image position)

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * When [C] key is pressed, the entered value is cleared.

3) When [EXECUTE] button is pressed, it is highlighted and printing for adjustment is started with the current set value.

   After completion of printing, [EXECUTE] button returns to the normal display.

* When [↑], [↓], [OK] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

* When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

* When the machine returns to the ready state after occurrence of an interruption, self printing is resumed.

<Description of item>

Item	Display item & Detail of display		Item content		Set range		Default value	Writing
A	BK-MAG		Main scan print magnification ratio BK		60 to 140		100	YES
B	MFT		Print off-center adjustment value (manual feed)		1 to 99		50	YES
C	CS1		Print off-center adjustment value (Cassette 1)		1 to 99		50	YES
D	CS2		Print off-center adjustment value (Cassette 2)		1 to 99		50	YES
E	CS3		Print off-center adjustment value (Cassette 3)		1 to 99		50	YES
F	CS4		Print off-center adjustment value (Cassette 4)		1 to 99		50	YES
G	LCC		Print off-center adjustment value (LCC)		1 to 99		50	YES
H	ADU		Print off-center adjustment value (ADU)		1 to 99		50	YES
I	MULTI COUNT		Print quantity		1 to 999		1	NO
J	PAPER	MFT	Cassette select	Manual feed	1 to 6	1	2 (CS1)	NO
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
K	DUPLEX	YES	Duplex print select	Selected	0 to 1	0	1 (NO)	NO
		NO		Not selected		1		

* Item A adjustment position

The main scanning direction paper size is greater than 216mm:

→ Reference: Main scanning direction print front image center position (160mm from the BD sensor in the LSU unit) ±120mm in the main scanning direction

The main scanning direction paper size is 257mm or less:

Reference: Main scanning direction print front image center position (160mm from the BD sensor in the LSU unit) ±60mm in the main scanning direction

* Adjustment direction

+ direction: Enlargement of magnification ratio

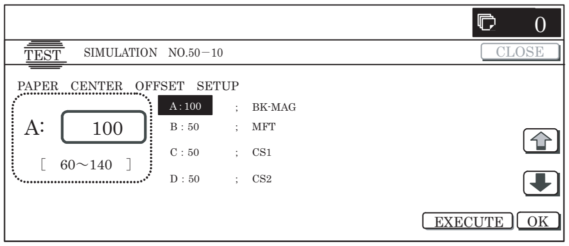
- direction: Reduction of magnification ratio

* When the adjustment value of item B to H is decreased by 1, the main scanning print position is shifted to the front side by 0.1mm.

* When the adjustment value of item B to H is increased by 1, the main scanning print position is shifted to the rear side by 0.1mm.

* Items J and K are displayed as "Display item: Detail of display."

Example: PAPER:CS1



SIMULATION NO.50−10

PAPER CENTER OFFSET SETUP

A: 100

[60～140]

A : 100 ; BK-MAG
B : 50 ; MFT
C : 50 ; CS1
D : 50 ; CS2

50-12

Purpose : Adjustment

Function (Purpose) : Used to execute the scan image off-center position adjustment. (Adjusted for each scan mode.)

Section :

Item : Image quality (Image position)

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered data are saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

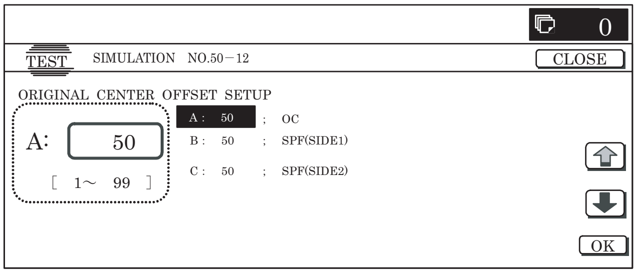
* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Set range and default value of each setup>

Item	Display item	Set range	Set value	Default value
A	OC	OC document off-center adjustment	1 to 99	50
B	SPF (SIDE1)	SPF front surface off-center adjustment	1 to 99	50
C	SPF (SIDE2)	SPF back surface off-center adjustment	1 to 99	50

Shift the pixel center position. The default value of the center is 3750 pixels.

A to C: When the adjustment value is increased, the center position is shifted to the rear side. 1step=0.1mm



SIMULATION NO.50−12

ORIGINAL CENTER OFFSET SETUP

A: 50

[1～ 99]

A : 50 ; OC
B : 50 ; SPF(SIDE1)
C : 50 ; SPF(SIDE2)

50-20

Purpose : Adjustment

Function (Purpose) : Used to execute the manual adjustment of the main scanning direction registration (color shift). (Backup value input)

Section :

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * When [C] key is pressed, the entered value is cleared.

3) When [EXECUTE] button is pressed, it is highlighted and the currently entered data are saved to EEPROM and RAM. Then the main scanning direction registration adjustment pattern is printed.

   After completion of printing, [EXECUTE] button returns to the normal display.

4) When [↑], [↓], [OK], [EXECUTE] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

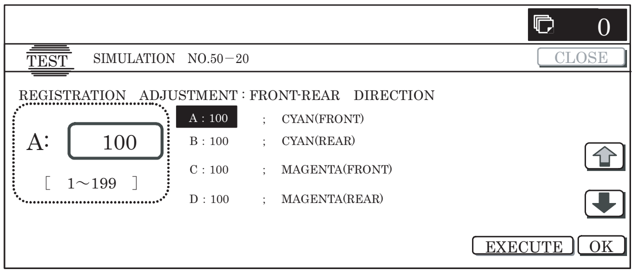
   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

   * When the machine returns to the ready state after occurrence of an interruption, self printing is resumed.

<Description of item>

Item	Display item & Detail of display		Description of item		Set range		Default value	Writing
A	CYAN (FRONT)		Registration adjustment value main scanning direction (Cyan laser writing position F side)		1 to 199		100	YES
B	CYAN (REAR)		Registration adjustment value main scanning direction (Cyan laser writing position R side)		1 to 199		100	YES
C	MAGENTA (FRONT)		Registration adjustment value main scanning direction (Magenta laser writing position F side)		1 to 199		100	YES
D	MAGENTA (REAR)		Registration adjustment value main scanning direction (Magenta laser writing position R side)		1 to 199		100	YES
E	YELLOW (FRONT)		Registration adjustment value main scanning direction (Yellow laser writing position F side)		1 to 199		100	YES
F	YELLOW (REAR)		Registration adjustment value main scanning direction (Yellow laser writing position R side)		1 to 199		100	YES
G	MULTICOUNT		Print quantity		1 to 999		1	NO
H	PAPER	MFT	Cassette select	Manual feed	1 to 6	1	3 (CS2)	NO
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
I	DUPLEX	YES	Duplex print select	Selected	0 to 1	0	1 (NO)	NO
		NO		Not selected		1		

* Items H and I are displayed as "Display item: Detail of display."
Example: PAPER:CS1



50-21

Purpose : Adjustment

Function (Purpose) : Used to execute the manual adjustment of the sub scanning registration (color shift). (Backup value input)

Section : —

Item : Image quality

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * When [C] key is pressed, the entered value is cleared.

3) When [EXECUTE] button is pressed, it is highlighted and the currently entered data are saved to EEPROM and RAM. Then the main scanning direction registration adjustment pattern is printed.

   After completion of printing, [EXECUTE] button returns to the normal display.

   * When [↑], [↓], [OK], [EXECUTE] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

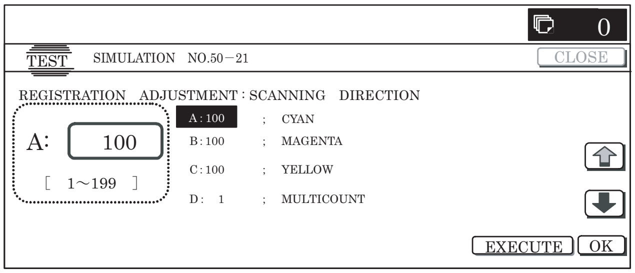
* When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed during printing, the operation is interrupted.

* When the machine returns to the ready state after occurrence of an interruption, self printing is resumed.

<Description of item>

Item	Display item & Detail of display		Description		Set value		Default value	Writing
A	CYAN		Registration adjustment value sub scanning direction (Cyan drum → Black drum)		1 to 199		100	YES
B	MAGENTA		Registration adjustment value sub scanning direction (Magenta drum → Black drum)		1 to 199		100	YES
C	YELLOW		Registration adjustment value sub scanning direction (Yellow drum → Black drum)		1 to 199		100	YES
D	MULTICOUNT		Print quantity		1 to 999		1	NO
E	PAPER	MFT	Cassette select	Manual feed	1 to 6	1	2 (CS1)	NO
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
F	DUPLEX	YES	Duplex print select	Selected	0 to 1	0	1 (NO)	NO
		NO		Not selected		1		

* Items E and F are displayed as "Display item : Detail of display."
Example: PAPER:CS1



REGISTRATION ADJUSTMENT : SCANNING DIRECTION

A: 100

[1～199]

A : 100 ; CYAN
B : 100 ; MAGENTA
C : 100 ; YELLOW
D : 1 ; MULTICOUNT

50-22

Purpose	:	Adjustment
Function (Purpose)	:	Used to execute the auto adjustment of the main/sub scan the main/sub registration. (Print on the belt/ Scan with the registration sensor (photo sensor) Image registration adjustment (Auto adjustment) adjustment image quality image position
Section	:	–
Item	:	Image quality

Operation/Procedure

1) Select the mode. (In this example, [REGIST] is selected.)
   - * Press the button to select a category. The selected button is highlighted. The set item of the selected button is displayed.
   - * Only one button can be selected. The selected button is highlighted. In the initial state, [ALL] button is selected.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.
2) When [EXECUTE] button is pressed, it is highlighted and all the drum motors are driven to start the adjustment.
   - * After completion of the adjustment, the drum motor is stopped and [EXECUTE] button returns to the normal display. The adjustment result is displayed.

     MAIN, SUB:

     After the adjustment, the adjustment value is displayed.

     ( ) Difference from the previous value.

     Example: This time 105, previous time 103: 105 (+2)

     PHASE:

     The number assigned to the phase is displayed.

     ( ) Difference from the previous value.

<Display items and contents in normal end>

Button		Display		Content	Display	Default value	Remark
ALL (All execution (Both of the auto registration adjustment and the auto phase adjustment are executed.)	REGIST (Auto registration adjustment is executed.)	MAIN F	C	Registration adjustment value main scan direction (Cyan laser writing position F side)	1.0 – 199.0	100.0	Same item with SIM50-20 * However, the adjustment accuracy is in the unit of ±0.1 dot. (The adjustment accuracy of 50-20, -21 is in the unit of ±1.0dot.)
			M	Registration adjustment value main scan direction (Magenta laser writing position F side)	1.0 – 199.0	100.0	
			Y	Registration adjustment value main scan direction (Yellow laser writing position F side)	1.0 – 199.0	100.0	
		MAIN R	C	Registration adjustment value main scan direction (Cyan laser writing position R side)	1.0 – 199.0	100.0	
			M	Registration adjustment value main scan direction (Magenta laser writing position R side)	1.0 – 199.0	100.0	
			Y	Registration adjustment value main scan direction (Yellow laser writing position R side)	1.0 – 199.0	100.0	
		SUB	C	Registration adjustment value sub scan direction (Cyan drum → Black drum)	1.0 – 199.0	100.0	
			M	Registration adjustment value sub scan direction (Magenta drum → Cyan drum)	1.0 – 199.0	100.0	
			Y	Registration adjustment value sub scan direction (Yellow drum → Magenta drum)	1.0 – 199.0	100.0	
	DLUM POS (Auto phase adjustment is executed.)	PHASE	Phase adjustment value BK → CL	Angle step 0° (1) → 45° (2) → 90° (3) → 135° (4) → 180° (5) → 225° (6) → 270° (7) → 315°(8)	1 – 8	2	Same item with SIM 44-31

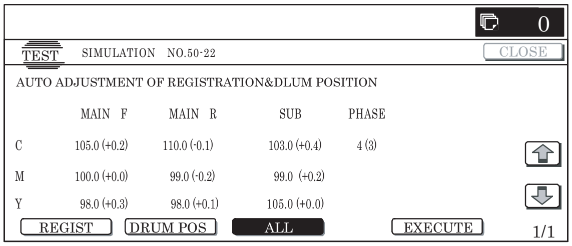
<Error displays and contents in error end>

	Error code	Error display	Error content	Detail of content
Compulsory end error	-	SUSPENDED	Door open end	Door open during operation
	-	SUSPENDED	CA end	Pressing [CA] button during operation
	-	-	OFF end	Unconfirmed operation (power OFF) during operation
Basic error	1	TONER EMPTY	Toner empty	BK or all colors toner empty detection
	2	TONER BEFORE BEHAVIOR	Other conditions	Other conditions
	4	SENSOR CALIBRATION	Calibration error	With 3 times of retry of F or R, the target is not reached.
	5	TIME OVER	Time error	Data is not acquired for 90sec from data acquisition
	7	PROCESS CONTROL	Process control error	Process control error detection

	Error code	Error display	Error content	Detail of content
Sub scan adjustment error	10	MAIN BLACK FRONT	Number error sub scan BLACKF	The number of pitch data is not the specified number.
	11	MAIN BLACK FRONT	Pitch error sub scan BLACK F	The pitch data is not in the specified allowable range.
	15	SUB BLACK REAR	Number error sub scan BLACKR	The number of pitch data is not in the specified range.
	16	SUB BLACK REAR	Pitch error sub scan BLACK R	The pitch data is not in the specified allowable range.
	20	SUB CYAN FRONT	Number error sub scan CYAN F	The number of pitch data is not the specified number.
	21	SUB CYAN FRONT	Pitch error sub scan CYAN F	The pitch data is not in the specified allowable range.
	22	SUB CYAN FRONT	Adjustment value error sub scan CYAN F	The calculation result value is not in the specified allowable range.
	23	SUB CYAN FRONT	Result value error sub scan CYAN F	The variation of the calculation result value is over the specified allowable range.
	25	SUB CYAN REAR	Number error sub scan CYAN R	The number of pitch data is not the specified number.
	26	SUB CYAN REAR	Pitch error sub scan CYAN R	The pitch data is not in the specified allowable range.
	27	SUB CYAN REAR	Adjustment value error sub scan CYAN R	The calculation result value is not in the specified allowable range.
	28	SUB CYAN REAR	Result value error sub scan CYAN R	The variation of the calculation result value is over the specified allowable range.
	30	SUB MAGENTA FRONT	Number error sub scan MAGENTA F	The number of pitch data is not the specified number.
	31	SUB MAGENTA FRONT	Pitch error sub scan MAGENTAF	The pitch data is not in the specified allowable range.
	32	SUB MAGENTA FRONT	Adjustment value error sub scan MAGENTA F	The calculation result value is not in the specified allowable range.
	33	SUB MAGENTA FRONT	Result value error sub scan MAGENTA F	The variation of the calculation result value is over the specified allowable range.
	35	SUB MAGENTA REAR	Number error sub scan MAGENTA R	The number of pitch data is not the specified number.
	36	SUB MAGENTA REAR	Pitch error sub scan MAGENTAR	The pitch data is not in the specified allowable range.
	37	SUB MAGENTA REAR	Adjustment value error sub scan MAGENTA R	The calculation result value is not in the specified allowable range.
	38	SUB MAGENTA REAR	Result value error sub scan MAGENTA R	The variation of the calculation result value is over the specified allowable range.
	40	SUB YELLOW FRONT	Number error sub scan YELLOW F	The number of pitch data is not the specified number.
	41	SUB YELLOW FRONT	Pitch error sub scan YELLOW F	The pitch data is not in the specified allowable range.
	42	SUB YELLOW FRONT	Adjustment value error sub scan YELLOW F	The calculation result value is not in the specified allowable range.
	43	SUB YELLOW FRONT	Result value error sub scan YELLOW F	The variation of the calculation result value is over the specified allowable range.
	45	SUB YELLOW REAR	Number error sub scan YELLOW R	The number of pitch data is not the specified number.
	46	SUB YELLOW REAR	Pitch error sub scan YELLOW R	The pitch data is not in the specified allowable range.
	47	SUB YELLOW REAR	Adjustment value error sub scan YELLOW R	The calculation result value is not in the specified allowable range.
	48	SUB YELLOW REAR	Result value error sub scan YELLOW R	The variation of the calculation result value is over the specified allowable range.
Main scan adjustment error	50	MAIN BLACK FRONT	Number error main scan BLACK F	The number of pitch data is not the specified number.
	51	MAIN BLACK FRONT	Pitch error main scan BLACK F	The pitch data is not in the specified allowable range.
	55	MAIN BLACK REAR	Number error main scan BLACK R	The number of pitch data is not in the specified range.
	56	MAIN BLACK REAR	Pitch error main scan BLACK R	The pitch data is not in the specified allowable range.
	60	MAIN CYAN FRONT	Number error main scan CêFF	The number of pitch data is not the specified number.
	61	MAIN CYAN FRONT	Pitch error main scan CêFF	The pitch data is not in the specified allowable range.
	62	MAIN CYAN FRONT	Adjustment value error main scan CYAN F	The calculation result value is not in the specified allowable range.
	63	MAIN CYAN FRONT	Result value error main scan CYAN F	The variation of the calculation result value is over the specified allowable range.
	65	MAIN CYAN REAR	Number error main scan CYAN R	The number of pitch data is not the specified number.
	66	MAIN CYAN REAR	Pitch error main scan CYAN R	The pitch data is not in the specified allowable range.
	67	MAIN CYAN REAR	Adjustment value error main scan CYAN R	The calculation result value is not in the specified allowable range.
	68	MAIN CYAN REAR	Result value error main scan CYAN R	The variation of the calculation result value is over the specified allowable range.
	70	MAIN MAGENTA FRONT	Number error main scan MAGENTA F	The number of pitch data is not the specified number.
	71	MAIN MAGENTA FRONT	Pitch error main scan MAGENTA F	The pitch data is not in the specified allowable range.
	72	MAIN MAGENTA FRONT	Adjustment value error main scan MAGENTA F	The calculation result value is not in the specified allowable range.

	Error code	Error display	Error content	Detail of content
Main scan adjustment error	73	MAIN MAGENTA FRONT	Result value error main scan MAGENTA F	The variation of the calculation result value is over the specified allowable range.
	75	MAIN MAGENTA REAR	Number error main scan MAGENTA R	The number of pitch data is not the specified number.
	76	MAIN MAGENTA REAR	Pitch error main scan MAGENTA R	The pitch data is not in the specified allowable range.
	77	MAIN MAGENTA REAR	Adjustment value error main scan MAGENTA R	The calculation result value is not in the specified allowable range.
	78	MAIN MAGENTA REAR	Result value error main scan MAGENTA R	The variation of the calculation result value is over the specified allowable range.
	80	MAIN YELLOW FRONT	Number error main scan YELLOW F	The number of pitch data is not the specified number.
	81	MAIN YELLOW FRONT	Pitch error main scan YELLOW F	The pitch data is not in the specified allowable range.
	82	MAIN YELLOW FRONT	Adjustment value error main scan YELLOW F	The calculation result value is not in the specified allowable range.
	83	MAIN YELLOW FRONT	Result value error main scan YELLOW F	The variation of the calculation result value is over the specified allowable range.
	85	MAIN YELLOW REAR	Number error main scan YELLOW R	The number of pitch data is not the specified number.
	86	MAIN YELLOW REAR	Pitch error main scan YELLOW R	The pitch data is not in the specified allowable range.
	87	MAIN YELLOW REAR	Adjustment value error main scan YELLOW R	The calculation result value is not in the specified allowable range.
	88	MAIN YELLOW REAR	Result value error main scan YELLOW R	The variation of the calculation result value is over the specified allowable range.
Other error	99	OTHER	Other error	Other error

(Initial screen or when in normal end)

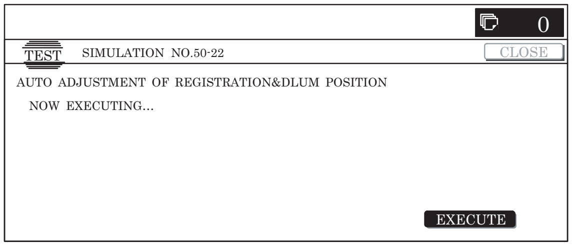


SIMULATION NO.50-22

AUTO ADJUSTMENT OF REGISTRATION&DLUM POSITION

	MAIN F	MAIN R	SUB	PHASE
C	105.0 (+0.2)	110.0 (-0.1)	103.0 (+0.4)	4 (3)
M	100.0 (+0.0)	99.0 (-0.2)	99.0 (+0.2)	
Y	98.0 (+0.3)	98.0 (+0.1)	105.0 (+0.0)	

(Adjustment screen)

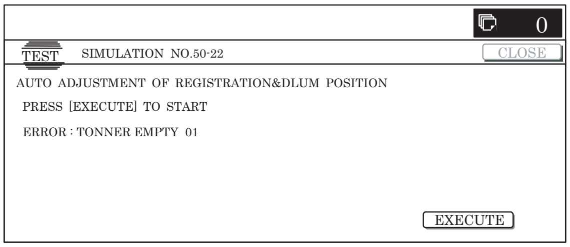


SIMULATION NO.50-22

AUTO ADJUSTMENT OF REGISTRATION&DLUM POSITION

NOW EXECUTING...

(Error end screen)



SIMULATION NO.50-22

AUTO ADJUSTMENT OF REGISTRATION&DLUM POSITION

PRESS [EXECUTE] TO START

ERROR : TONNER EMPTY 01

50-24

Purpose : Adjustment

Function (Purpose) : Used to display the data acquired with the auto registration adjustment simulation (SIM50-22).

Section : —

Item : Image quality

Operation/Procedure

1) When the machine enters Simulation 50-24, the following screen is displayed.

- * Select the kind of display with [NEXT] and [BACK] buttons.
- * Specify the color with [K], [C], [M], and [Y] buttons. (Depending on the selected kind of data, selection of a color button cannot be made. In that case, the key entry is disabled.)
- * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

  If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Display content>

1) Registration adjustment confirmation screen

   Use [K][C][M][Y] button to display the initial screen (No color specified/C/M/Y).

   Press [NEXT] button to display the next category.

   Press [BLACK] button to display the previous category.

2) Phase adjustment status check screen

   Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

   Press [NEXT] button to display the next category.

   Press [BACK] button to display the previous category.

3) Sensor calibration status check (No color specification)

   Press [K] button to display the initial screen of K.

   Press [NEXT] button to display the category.

   Press [BACK] button to display the previous category.

4) Sampling status check (1) (KCMY/No color specification)

   Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

   Press [NEXT] button to display the next category.

   Press [BACK] button to display the previous category.

5) Sampling status check (2) (KCMY)

   Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

   Press [NEXT] button to display the next category.

   Press [BACK] button to display the previous category.

6) Sampling status check (3) (KCMY)

Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

Press [NEXT] button to display the next category.

Press [BACK] button to display the previous category.

7) Sampling status check (4) (KCMY)

Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

Press [NEXT] button to display the next category.

Press [BACK] button to display the previous category.

8) Sampling status check (5) (KCMY)

Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

Press [NEXT] button to display the next category.

Press [BACK] button to display the previous category.

9) Sampling status check (6) (KCMY)

Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

Press [NEXT] button to display the next category.

Press [BACK] button to display the previous category.

10) Sampling status check (7) (KCMY)

Press [K][C][M][Y] button to display the initial screen (K/C/M/Y).

Press [NEXT] button to display the next category.

Press [BACK] button to display the previous category.

11) Temperature correction value check screen (CMY)

Press [C][M][Y] button to display the initial screen (C/M/Y).

Press [NEXT] button to display the next category.

Press [BACK] button to display the previous category.

12) Temperature correction value check screen (No color specification)

Press [K] button to display the initial screen (K).

Press [NEXT] button to display the next category.

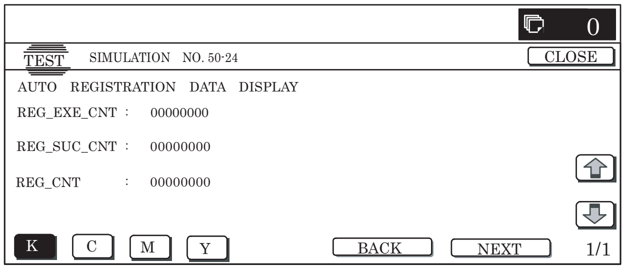
Press [BACK] button to display the previous category.

13) Error code status check (No color specification)

Press [K] button to display the initial screen (K).

Press [NEXT] button to display the next category.

Press [BACK] button to display the previous category.



SIMULATION NO. 50-24

AUTO REGISTRATION DATA DISPLAY

REG_EXE_CNT : 00000000

REG_SUC_CNT : 00000000

REG_CNT : 00000000

Initial screen (Registration adjustment status check screen (No color specification))

50-27

Purpose : Adjustment

Function (Purpose) : Used to adjust the image loss of scanned image in the FAX/Scanner mode.

Section : FAX/Scanner

Item : Image quality

Operation/Procedure

1) Use [FAX] button and [SCANNER] button to select the mode.
2) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.
3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.
4) When [OK] button is pressed, the current entered value is saved to EEPROM and RAM.

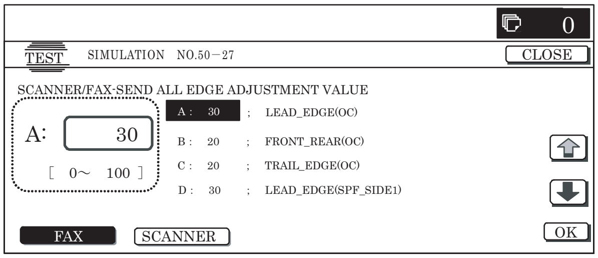
   * When [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the data are saved to EEPROM and RAM.

* When [CLOSE] button is pressed, the display is shifted to the copy basic screen of simulation.

<Set range and default value of each setup>

	Item	Display item		Description	Set range	Default value
FAX send	A	Image loss setting OC	LEAD_EDGE (OC)	OC lead edge image loss setting	0 to 100	30 (3mm)
	B		FRONT_REAR (OC)	OC side image loss setting	0 to 100	20 (2mm)
	C		TRAIL_EDGE (OC)	OC rear edge image loss setting	0 to 100	20 (2mm)
	D	Image loss setting SPF SIDE1	LEAD_EDGE (SPF_SIDE1)	Front surface lead edge image loss setting	0 to 100	20 (2mm)
	E		FRONT_REAR (SPF_SIDE1)	Front surface side image loss setting	0 to 100	20 (2mm)
	F		TRAIL_EDGE (SPF_SIDE1)	Front surface rear edge image loss setting	0 to 100	30 (3mm)
	G	Image loss setting SPF SIDE2	LEAD_EDGE (SPF_SIDE2)	Back surface lead edge image loss setting	0 to 100	20 (2mm)
	H		FRONT_REAR (SPF_SIDE2)	Back surface side image loss setting	0 to 100	20 (2mm)
	I		TRAIL_EDGE (SPF_SIDE2)	Back surface rear edge image loss setting	0 to 100	30 (3mm)
SCANNER mode (FAX, other than COPY)	A	Image loss setting OC	LEAD_EDGE(OC)	OC lead edge image loss setting	0 to 100	0 (0mm)
	B		FRONT_REAR(OC)	OC side image loss setting	0 to 100	0 (0mm)
	C		TRAIL_EDGE(OC)	OC rear edge image loss setting	0 to 100	0 (0mm)
	D	Image loss setting SPF SIDE1	LEAD_EDGE(SPF_SIDE1)	Front surface lead edge image loss setting	0 to 100	0 (0mm)
	E		FRONT_REAR(SPF_SIDE1)	Front surface side image loss setting	0 to 100	0 (0mm)
	F		TRAIL_EDGE(SPF_SIDE1)	Front surface rear edge image loss setting	0 to 100	0 (0mm)
	G	Image loss setting SPFSIDE2	LEAD_EDGE(SPF_SIDE2)	Back surface lead edge image loss setting	0 to 100	0 (0mm)
	H		FRONT_REAR(SPF_SIDE2)	Back surface side image loss setting	0 to 100	0 (0mm)
	I		TRAIL_EDGE(SPF_SIDE2)	Back surface rear edge image loss setting	0 to 100	0 (0mm)

* A to I: The greater the adjustment value is, the greater the image loss is. 1step=0.1mm



SCANNER/FAX-SEND ALL EDGE ADJUSTMENT VALUE

A: 30
[0～ 100]

A : 30 ; LEAD_EDGE(OC)
B : 20 ; FRONT_REAR(OC)
C : 20 ; TRAIL_EDGE(OC)
D : 30 ; LEAD_EDGE(SPF_SIDE1)

50-28

Purpose : Adjustment

Function (Purpose) : Used to execute the service adjustment, the OC adjustment, the BK main scan magnification ration correction, the RSPF adjustment, and the print position adjustment (Auto void adjustment (Service installation adjustment)).

Section : —

Item : Image quality

Operation/Procedure

1) When the machine enters Simulation 50-28, the following screen is displayed.
2) Press the button of an item to be adjusted, and the display is shifted to the adjustment screen.

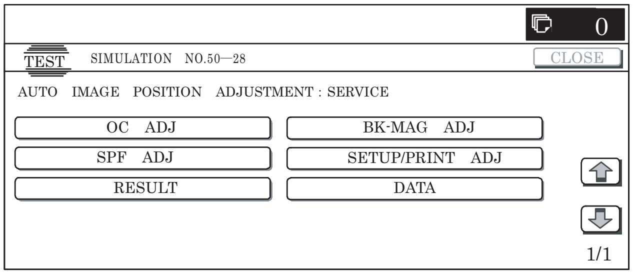
* The operating procedures and the display shift for each adjustment and the display, refer to the next page.

<List of adjustment items>

NO.	Menu display item	Content	Description
1	OC ADJ	OC adjustment	OC document lead edge, off-center, and sub scan magnification ratio adjustment
2	BK-MAG ADJ	BK main scan magnification ratio correction	BK main scan magnification ratio adjustment
3	SPF ADJ	SPF adjustment	RSPF (front/back) document lead edge, off-center, sub scan magnification ratio adjustment
4	SETUP/ PRINT ADJ	Print position adjustment	Print lead edge adjustment, all-cassette print off-center (individual cassette, ADU) adjustment
5	RESULT	Result display	Display of the adjustment result
6	DATA	Data display	Display of data used for the adjustment

<List of adjustment items and adjustment menus>

Adjustment item				Adjustment menu
Scanner	OC		Document lead edge	OC ADJ
			Document off-center	
			Sub scan magnification ratio	
			γ adjustment	–
	RSPF	SIDE1 (front)	Document lead edge	SPF ADJ (RSPF)
			Document off-center	
			Sub scan magnification ratio	
		SIDE2 (back)	Document lead edge	
			Document off-center	
			Sub scan magnification ratio	
Engine	–		BK main scan magnification ratio	BK-MAG ADJ
	MFT		Print off-center	SETUP/PRINT ADJ
			Print lead edge	
	CS1		Print off-center	
			Print lead edge	
	CS2		Print off-center	
			Print lead edge	
	ADU		Print off-center	
			Print lead edge	
	CS3		Print off-center	
			Print lead edge	
	CS4		Print off-center	
			Print lead edge	
	LCC		Print off-center	
			Print lead edge	



AUTO IMAGE POSITION ADJUSTMENT : SERVICE

50-28

Purpose : Adjustment

Function (Purpose) : Used to adjust the OC document lead edge, off-center, and the sub scan magnification ratio. (Auto void adjustment (Service installation adjustment) (1: OC adjustment))

Section : —

Item : Image quality

Operation/Procedure

1) When [OC ADJ] button is pressed on the top menu screen, the screen shown on the right side is displayed.
2) Select a cassette of self print of the OC adjustment pattern. (Only one cassette can be selected.)
3) Press [EXECUTE] button to start self print of the OC adjustment pattern.
   - * During self printing of the OC adjustment
     After completion of self print, the display is shifted to the OC adjustment start screen.
4) Set the OC adjustment pattern on the OC with the corner reference, and cover the black background chart over the OC adjustment pattern.
   - * Set the adjustment pattern in traversal position (A4). Check to confirm that there is no clearance with the document guide.
   - * Kind and size of black background charts made with a cutting sheet equivalent to 310 x 470 cutting sheet No. 791 (Black).
5) Press [EXECUTE] button to start scanning of the OC adjustment pattern.
   - * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the OC adjustment pattern again.
   - * During scanning of the OC adjustment pattern and calculating of the adjustment value
     After completion of scanning, the adjustment value is calculated.
     After completion of calculation of the adjustment value, the display is shifted to the result display screen.

<Adjustment item>

- OC document lead edge adjustment
- OC document off-center adjustment
- OC sub scan magnification ratio adjustment

6) The adjustment result is displayed.

   The value of this time is displayed together with the difference from the previous value in ( ).

   * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the OC adjustment pattern again.

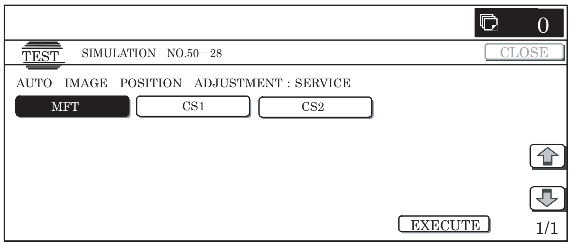
   * When [RESCAN] button is pressed, scanning of the OC adjustment pattern is started again.

   * When [RETRY] button is pressed, the adjustment value is not saved to EEPROM and RAM and the display is shifted to the top menu screen.

   * When [DATA] button is pressed, the data used for the adjustment are displayed.

7) When [OK] button is pressed, the adjustment value is saved to EEPROM and RAM and the display is shifted to the top menu screen.

   * When [BACK] button is pressed, the display returns to the result display screen.



50-28

Purpose : Adjustment

Function (Purpose) : Used to execute the BK main scan magnification ratio adjustment.
(Auto void adjustment (Service instillation) (2: BK-main scan magnification ratio correction))

Section : —

Item : Image quality

Operation/Procedure

1) When [BK-MAG ADJ] button is pressed on the top menu screen, the following screen is displayed.

2) Select a cassette for self print of the BK magnification ratio adjustment pattern. (Only one cassette can be selected.)

3) When [EXECUTE] button is pressed, self print of the BK magnification ratio adjustment pattern (print position adjustment pattern) is started.

   * During self print of the BK magnification ratio adjustment pattern

   After completion of self print, the display is shifted to the OC adjustment screen.

4) Load the BK magnification ratio adjustment pattern to the OC.

   * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the BK magnification ratio adjustment pattern again.

5) Press [EXECUTE] button to start scanning of the BK magnification ratio adjustment pattern.

   * During scanning of the main scan magnification ratio correction pattern and calculating the magnification ratio adjustment value

   After completion of scanning, calculation of the adjustment value is started.

   After completion of calculation, the display is shifted to the result display screen.

<Adjustment item>

- BK magnification ratio adjustment

6) The adjustment result screen is displayed.

   The value of this time is displayed together with the difference from the previous value in ( ).

   * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the BK magnification ratio adjustment pattern again.

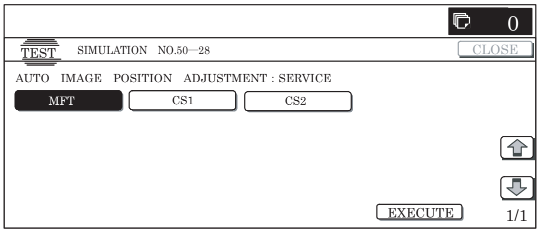
   * When [RESCAN] button is pressed, scanning of the BK magnification ratio adjustment pattern is started again.

   * When [RETRY] button is pressed, the adjustment value is not saved to EEPROM and RAM and the display is shifted to the top menu screen.

   * When [DATA] button is pressed, the data used for the adjustment are displayed.

7) When [OK] button is pressed, the adjustment value is saved to EEPROM and RAM and the display is shifted to the top menu screen.

* When [BACK] button is pressed, the display returns to the result display screen.



50-28

Purpose : Adjustment

Function (Purpose) : Used to execute the RSPF (Front/Back) document lead edge, off-center, and sub scan magnification ratio adjustment.
(Auto void adjustment (Service installation adjustment) (3: RSPF adjustment))

Section : RSPF

Item : Image quality

Operation/Procedure

1) When [SPF ADJ] button is pressed on the top menu screen, the screen on the right is displayed.

2) Select an item to be adjusted. The display is shifted to the cassette select screen for printing the SPF adjustment pattern.

3) Select a cassette for printing the SPF adjustment pattern. (Only one cassette can be selected.)

4) When [EXECUTE] button is pressed, self print of the SPF adjustment pattern is started.

   * During self print of the SPF adjustment pattern

   After completion of self print, the display is shifted to the SPF adjustment screen.

5) Load the SPF adjustment pattern to the SPF.

   * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the SPF adjustment pattern again.

6) Press [EXECUTE] button to start scanning the SPF adjustment pattern (front surface).

   * During scanning of the SPF adjustment pattern (front surface) and calculating

   After completion of scanning the front surface, calculation of the adjustment value (front surface) is started.

After completion of calculation of the front surface adjustment value, the display is shifted to the SPF adjustment pattern (back surface) scan start screen.

<Adjustment item>

- SPF document lead edge adjustment front surface
- SPF document off-center adjustment front surface
- SPF sub scan magnification ratio adjustment front surface

7) Load the SPF adjustment pattern to the SPF.
   - * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the SPF adjustment pattern again.

8) Press [EXECUTE] button to start scanning the SPF adjustment pattern (back surface).
   - * During scanning of the SPF adjustment pattern (back surface)

     After completion of scanning the back surface, calculation of the adjustment value (back surface) is started.

     After completion of calculation, the display is shifted to the result display screen.

<Adjustment item>

- SPF Document lead edge adjustment back surface
- SPF Document off-center adjustment back surface
- SPF sub scan magnification ratio adjustment back surface (RSPF)

9) The adjustment result screen is displayed.

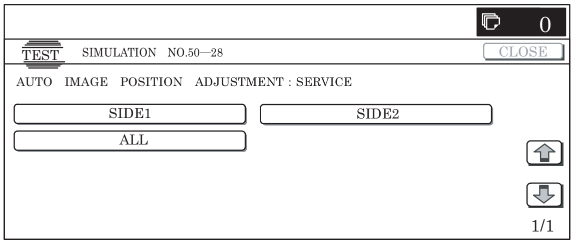
   The value of this time is displayed together with the difference from the previous value in ( ).
   - * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the SPF adjustment pattern (front/back) again.
   - * When [RESCAN] button is pressed, scanning of the SPF adjustment pattern (front/back) is started again.
   - * When [RETRY] button is pressed, the adjustment value is not saved to EEPROM and RAM and the display is shifted to the top menu screen.
   - * When [DATA] button is pressed, the data used for the adjustment are displayed.

10) When [OK] button is pressed, the adjustment value is saved to EEPROM and RAM and the display is shifted to the completed screen.

* When [BACK] button is pressed, the display is shifted to the result display screen.

<List of adjustment items>

Menu display item	Content
SIDE1	SPF adjustment front surface
SIDE2	SPF adjustment back surface
ALL	SPF adjustment front/back surface



50-28

Purpose : Adjustment

Function (Purpose) : Used to execute the print lead edge adjustment and the all-cassette print off-center (individual cassette, ADU) adjustment.
(Auto void adjustment (Service installation adjustment) (4: Print position adjustment)

Section : —

Item : Image quality

Operation/Procedure

1) When [SETUP/PRINT ADJ] button is pressed on the top menu screen, the screen on the right is displayed.

2) When an item to be adjusted is selected, the display is shifted to the cassette select screen for printing the print position adjustment pattern.

3) Select a cassette for use in print. (Two or more cassettes can be selected.) The selected cassette is highlighted.

   When the selected cassette is pressed again, it returns to the normal display.

4) Press [EXECUTE] button to start self-printing of the print position adjustment pattern.
   - * During self-printing of the print position adjustment pattern (CS3)
   - * When two or more cassettes are selected, continuous self print (max. 7 sheets) is executed.

     After completion of self-printing, the display is shifted to the print position adjustment.

5) Load the print position adjustment pattern (CS3) to the OC.
   - * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the print position adjustment pattern again.

6) Press [EXECUTE] button to start scanning of the print position adjustment (CS3).
   - * During scanning of the print position adjustment pattern (CS3) and calculation

     After completion of scanning, calculation of the adjustment value (CS3) is started.

     After completion of calculation, the display is shifted to the result display screen.

<Adjustment item>

- Print lead edge (CS3/CS4)
- Print off-center (CS3)
- * When two or more cassettes are selected, scanning and calculation are repeated for the number of output sheets (3 to max.7).

7) The adjustment result screen is displayed.

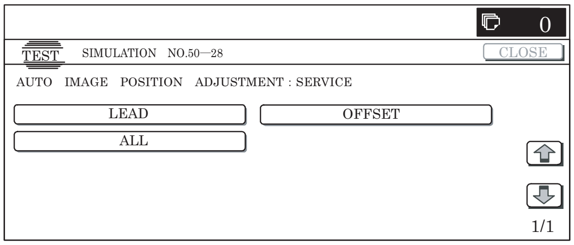
   The value of this time is displayed together with the difference from the previous value in ( ).
   - * "**"is displayed for an item which is not adjusted yet.
   - * An item which is not installed is not displayed depending on the option status.
   - * When [REPRINT] button is pressed, the display returns to the cassette select screen to allow self-printing of the print position adjustment pattern again.
   - * When [RESCAN] button is pressed, scanning of the print position adjustment pattern is started again.
   - * When [RETRY] button is pressed, the adjustment value is not saved to EEPROM and RAM and the display is shifted to the top menu screen.
   - * When [DATA] button is pressed, the data used for adjustment are displayed.

8) When [OK] button is pressed, the adjustment value is saved to EEPROM and RAM and the display is shifted to the top menu screen.

* When [BACK] button is pressed, the display returns to the result display screen.

<List of adjustment items>

Menu display item	Content
LEAD	Print lead edge adjustment
OFFSET	Print off-center adjustment
ALL	Print lead edge, print of-center adjustment



50-28

Purpose : Adjustment

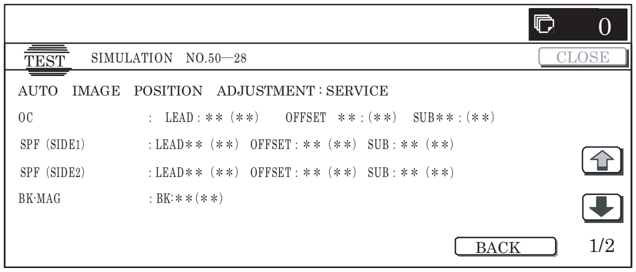
Function (Purpose) : Used to display the adjustment result. (Auto void adjustment (Service installation adjustment) (5: result display)

Section : —

Item : Image quality

Operation/Procedure

1) When [RESULT] button is pressed on the top menu screen, the screen on the right is displayed.
2) When [BACK] button is pressed, the display is shifted to the top menu screen.



AUTO IMAGE POSITION ADJUSTMENT : SERVICE

OC : LEAD : ＊＊ (＊＊) OFFSET ＊＊ : (＊＊) SUB＊＊ : (＊＊)

SPF (SIDE1) : LEAD＊＊ (＊＊) OFFSET : ＊＊ (＊＊) SUB : ＊＊ (＊＊)

SPF (SIDE2) : LEAD＊＊ (＊＊) OFFSET : ＊＊ (＊＊) SUB : ＊＊ (＊＊)

BK-MAG : BK:＊＊(＊＊)

50-28

Purpose : Adjustment

Function (Purpose) : Used to display the data used for the adjustment. (Auto void adjustment (Service installation adjustment) (6: data display))

Section : —

Item : Image quality

Operation/Procedure

1) When the machine enters Simulation 50-28, the following screen is displayed.

   When [OC·SPF] button is pressed, the data used for the OC adjustment and the SPF adjustment are displayed.

   When [BK-MAG] button is pressed, the data used for BK main scan magnification ratio adjustment are displayed.

   When [PRINT] button is pressed, the data used for the print position adjustment are displayed.

   * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

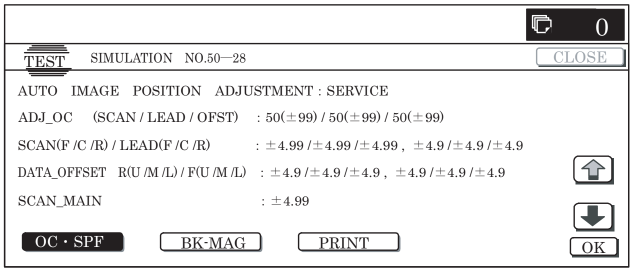
     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.

* When [OK] button is pressed, the display is shifted to the top menu screen.

<Data display item and description>

Adjustment item (page)		Item display	Display content	Display range (difference from the previous value)	Unit
OC·SPF	OC (1)	ADJ_OC (SCAN/LEAD/OFST)	OC adjustment value, correction value	1 to 99 (–99 to +99)	STEP
		SCAN (F/C/R)/LEAD (F/C/R)	OC magnification ratio, lead edge data	SCAN: –4.99 to +4.99 LEAD: –4.9 to +4.9	SCAN: % LEAD: mm
		DATA_OFFSET R (U/M/L)/F (U/M/L)	OC off-center data	–4.9 to +4.9	mm
		SCAN_MAIN	OC Main scan magnification ratio correction value	–4.99 to +4.99	%
	SPF1 (2)	ADJ_SPF1 (SCAN/LEAD/OFST)	SPF1 adjustment value, correction value	1 to 99 (± 99)	STEP
		SCAN (F/C/R)/LEAD (F/C/R)	SPF1 magnification ratio, lead edge data	SCAN: –4.99 to +4.99 LEAD: –4.9 to +4.9	SCAN: % LEAD: mm
		DATA_OFFSET R (U/M/L)/F (U/M/L)	SPF1 off-center data	–4.9 to +4.9	mm
		SCAN_MAIN	SPF1 main scan magnification ratio correction value	–4.99 to +4.99	%
	SPF2 (3)	ADJ_SPF2 (SCAN/LEAD/OFST)	SPF2 adjustment value, correction value	1 to 99 (± 99)	STEP
		SCAN (F/C/R)/LEAD (F/C/R)	SPF2 magnification ratio, lead edge data	SCAN: –4.99 to +4.99 LEAD: –4.9 to +4.9	SCAN: % LEAD: mm
		DATA_OFFSET R (U/M/L)/F (U/M/L)	SPF2 off-center data	–4.9 to +4.9	mm
		SCAN_MAIN	SPF2 main scan magnification ratio correction value	–4.99 to +4.99	%
	Status (4)	PAPER (OC/SPF1/SPF2)	Paper information	A4, A4R, A3, LT, LTR, WL	–
		COUNT (OC/SPF1/SPF2)	Counter	0 to 255	Times
		ERROR	Error history	–	Error code

Adjustment item (page)	Item display	Display content	Display range (difference from the previous value)	Unit
BK-MAG	ADJ (BK-MAG)/PAPER/ COUNT	BK-MAG adjustment value, correction value	ADJ: 1 to 199 (–199 to +199) PAPER_SCAN DEVICE: OC, SPF1, SPF2 PAPER_PAPER_SIZE: A4, A4R, A3, LT, LTR, WL PAPER_CS: MFT,CS1,CS2, CS3, CS4,LCC PAPER_PRINT_DIR: F, R, U, L COUNT: 0 to 255	ADJ STEP PAPER: - COUNT: Times
	BK-MAG	BK-MAG data	-9.99 to +9.99	mm
	SCAN_MAG (SUB, MAIN)	BK-MAG scan magnification ratio correction value	SUB:-99 to +99 MAIN:-4.99 to +4.99	SUB:MAIN:-4.99 to +4.99
	ERROR	Error history	–	Error code
PRINT	ADJ_MFT (LEAD/OFST)	PRINT adjustment value, correction value	LEAD,OFST:-4.9 to +4.9 PAPER_SCAN DEVICE: LEAD, OFST: OC, SPF1, SPF2 PAPER_PAPER_SIZE: A4, A4R, A3, LT, LTR, WL PAPER_PRINT_DIR: F, R, U, L COUNT: 0 to 255	LEAD, OFST: mm PAPER: – COUNT: Times
	LEAD (F/C/R)	PRINT lead edge data	-4.9 to +4.9	mm
	OFFSET R (U/M/L)/F (U/M/L)	Off-center data	-4.9 to +4.9	mm
	ERROR	Error history	–	Error code



SIMULATION NO.50—28

AUTO IMAGE POSITION ADJUSTMENT : SERVICE

ADJ_OC (SCAN / LEAD / OFST) : 50(±99) / 50(±99) / 50(±99)

SCAN(F /C /R) / LEAD(F /C /R) : ±4.99 /±4.99 /±4.99 , ±4.9 /±4.9 /±4.9

DATA_OFFSET R(U /M /L) / F(U /M /L) : ±4.9 /±4.9 /±4.9 , ±4.9 /±4.9 /±4.9

SCAN_MAIN : ±4.99

51

51-1

Purpose : Adjustment

Function (Purpose) : Used to adjust the ON/OFF timing of the transfer voltage and the separation bias voltage.

Section : Process

Item : Operation (Transfer)

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current set value is saved to EEPROM and RAM.

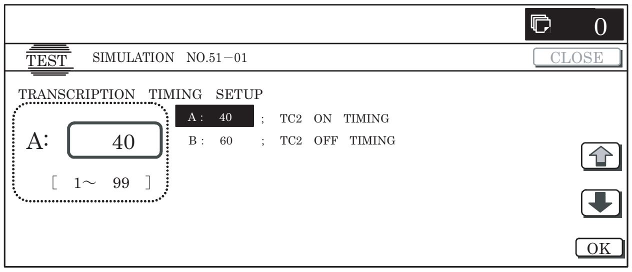
<Set range and default value of each set value>

Item	Display item	Description of content	Set range	Default value
A	TC2 ON TIMING	Secondary transfer voltage ON timing setting	1 to 99	40
B	TC2 OFF TIMING	Secondary transfer voltage OFF timing setting	1 to 99	60

When the value of transfer ON/OFF timing is decreased, the transfer ON/Off timing for paper is advanced.

When the value of transfer ON/OFF timing is increased, the transfer ON/Off timing for paper is delayed.

(±1: about 10ms change)(Set range: –490 to +490ms)



SIMULATION NO.51−01

TRANSCRIPTION TIMING SETUP

A: 40

[1～ 99]

A : 40 ; TC2 ON TIMING

B : 60 ; TC2 OFF TIMING

51-2

Purpose : Adjustment

Function (Purpose) : Used to adjust the contact pressure of paper against the registration roller (main unit paper feed section, duplex paper feed, SPF paper feed) on each section. (When there are much variations in print image positions for paper or when the paper jam occurs, the adjustment is required.) Used to change the deflection quantity correction value of each specified cassette.

Section : Paper transport

Item : Operation

Operation/Procedure

1) Select a category to be set. (In this example, [SIDE1] is selected.)

   * Select a category, and the selected button is highlighted. The set item of the selected category button is displayed.

   * Only one button can be selected. The selected button is highlighted.

     On the initial display, [SIDE1] is selected.

     Select the set item with [↑] and [↓] buttons.

     The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.
   * Press [C] key to clear the entered values.

3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.
   * When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.

<Set range and default value of each set value>

Item	Button	Display item	Description of item (Mode, document, paper feed speed)	Transport direction	Set range	Default value
A	SIDE1	NORMAL_PLAIN_HIGH	RSPF front surface document, deflection quantity adjustment value (normal, plain paper, HIGH)	–	1 to 99	50
B		NORMAL_PLAIN_LOW	RSPF front surface document, deflection quantity adjustment value (normal, plain paper, LOW)	–	1 to 99	50
C		NORMAL_ THIN _HIGH	RSPF front surface document, deflection quantity adjustment value (normal, thin paper, HIGH)	–	1 to 99	50
D		NORMAL__THIN LOW	RSPF front surface document, deflection quantity adjustment value (normal, thin paper, LOW)	–	1 to 99	50
E		RANDOM_PLAIN_LOW	RSPF front surface document, deflection quantity adjustment value (random, plain paper, LOW)	–	1 to 99	50
F		RANDOM_ THIN _LOW	RSPF front surface document, deflection quantity adjustment value (random, thin paper, LOW)	–	1 to 99	50
A	SIDE2	NORMAL_PLAIN_HIGH_1	RSPF back surface document, deflection quantity adjustment value 1(normal, plain paper, HIGH)	–	1 to 99	50
B		NORMAL_PLAIN_LOW_1	RSPF back surface document, deflection quantity adjustment value 1(normal, plain paper, LOW)	–	1 to 99	50
C		NORMAL_PLAIN_HIGH_2	RSPF back surface document, deflection quantity adjustment value 2(normal, plain paper, HIGH)	–	1 to 99	50
D		NORMAL_PLAIN_LOW_2	RSPF back surface document, deflection quantity adjustment value 2(normal, plain paper, LOW)	–	1 to 99	50
A	ENGIN	TRAY1(S)	Main unit cassette 1 (upper stage), deflection adjustment value (small size)	LT size or less	1 to 99	40
B		TRAY1(L)	Main unit cassette 1 (upper stage), deflection adjustment value (large size)	Longer size than the above	1 to 99	40
C		TRAY2(S)	Main unit cassette 1 (upper stage), deflection adjustment value (small size)	LT size or less	1 to 99	40
D		TRAY2(L)	Main unit cassette 1 (upper stage), deflection adjustment value (large size)	Longer size than the above	1 to 99	40
E		MANUAL PLAIN PAPER (S)	Manual tray, deflection adjustment value (plain paper, small size)	LT size or less	1 to 99	40
F		MANUAL PLAIN PAPER (L)	Manual tray, deflection adjustment value (plain paper, large size)	Longer size than the above	1 to 99	40
G		MANUAL HEAVY PAPER1 (S)	Manual feed tray, deflection adjustment value (Heavy paper, small size)	LT size or less	1 to 99	25
H		MANUAL HEAVY PAPER1 (L)	Manual feed tray, deflection adjustment value (Heavy paper, large size)	Longer size than the above	1 to 99	25
I		MANUAL OHP1	Manual feed tray, deflection adjustment value (OHP)	–	1 to 99	40
J		MANUAL ENV	Manual feed tray, deflection adjustment value (Envelope)	–	1 to 99	40
K		ADU PLAIN PAPER (S)	ADU, deflection adjustment value (Plain paper, small size)	LT size or less	1 to 99	40
L		ADU PLAIN PAPER (L)	ADU, deflection adjustment value (Plain paper, large size)	Longer size than the above	1 to 99	40
M		ADU HEAVY PAPER1 (S)	ADU, deflection adjustment value (Heavy paper, small size)	LT size or less	1 to 99	25
N		ENGIN ADU HEAVY PAPER1 (L)	ADU, deflection adjustment value (Heavy paper, large size)	Longer size than the above	1 to 99	25
O		DESK(S)	DESK, deflection adjustment value (Plain paper, small size)	LT size or less	1 to 99	40
P		DESK(L)	DESK, deflection adjustment value (Plain paper, large size)	Longer size than the above	1 to 99	40
Q		A4LCC	A4LCC, Deflection adjustment value		1 to 99	40

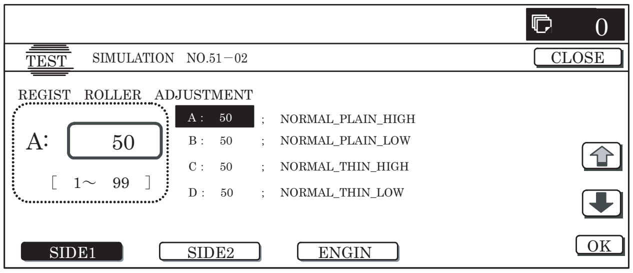
<Expression of (Large size) and (Small size)>

(Small size): The paper length in the transport direction is LT (216mm) or less.

(Large size): The paper length in the transport direction is longer than LT (216mm).

<Adjustment value>

When the adjustment value is increased, the deflection quantity is increased. When the adjustment value is decreased, the deflection quantity is decreased. (When the adjustment value is changed by 1, the stop timing is changed by 0.1mm.)



SIMULATION NO.51－02

REGIST ROLLER ADJUSTMENT

A: 50

[1～ 99]

A : 50 ; NORMAL_PLAIN_HIGH
B : 50 ; NORMAL_PLAIN_LOW
C : 50 ; NORMAL_THIN_HIGH
D : 50 ; NORMAL_THIN_LOW

53

53-6

Purpose : Adjustment

Function (Purpose) : Used to adjust the RSPF document tray size of the main unit.

Section : RSPF

Item : Operation

Operation/Procedure

1) Set the tray document guide to the max. width position, and press [EXECUTE] key. The button is highlighted and the tray size volume maximum value adjustment is started.
   - * During the adjustment, "EXECUTING..." is displayed.
   - * After completion of the tray size volume maximum value adjustment, the set value is saved to EEPROM and RAM and the display is shifted to the tray volume A4R size adjustment value start screen. (Each set value is saved to EEPROM and RAM at each setting.)
2) Set the tray document guide to A4R (11 x 8.5R) width position and press [EXECUTE] button. The pressed button is highlighted and the tray A4R size adjustment is started.
3) Adjust the tray volume A5R size and the tray size volume minimum value according to the above procedures.
4) After completion of the adjustment, "COMPLETE"is displayed. If the adjustment is not completed normally for any reason,"ERROR"is displayed. In that case, the adjustment must be executed again.

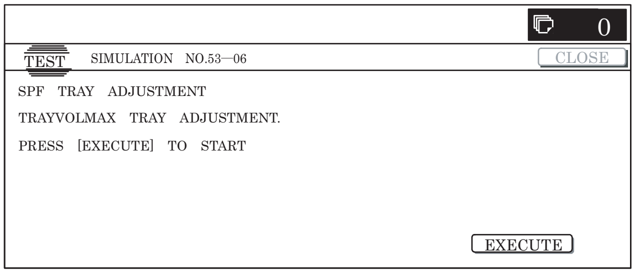
<Adjustment item and content>

No.	Display	Content
1	TRAYVOLMAX	Tray size volume maximum value
2	TRAYVOLA4R	Tray volume A4R size adjustment value
3	TRAYVOLA5R	Tray volume A5R size adjustment
4	TRAYVOLMIN	Tray size volume minimum value

When one of 1-4 in the above table is selected, the guide plate is shifted to each position of the four widths of the guide plate shown in the table below. The value of the document width sensor (RSPF_WIDTH) A/D value is saved to EEPROM.

<Guide plate positions and widths on the mechanism and A/D values to be saved>

No.	Guide plate position	Widths on the mechanism			A/D value, code in the figure below	Remark
		AB series	INCHI series	Code in the figure below		
1	Maximum position	303.3	303.3	WIDTH_MAX	AD_MAX	
2	Middle position (L)	210	215,9	WITH_P1	AD_P1	A4R OR LTR
3	Middle position (S)	148.5	139.7	WITH_P2	AD_P2	A5R OR INVR
4	Minimum position	118	118	WITH_MIN	AD_MIN	



SIMULATION NO.53—06

SPF TRAY ADJUSTMENT

TRAYVOLMAX TRAY ADJUSTMENT.

PRESS [EXECUTE] TO START

53-7

Purpose : Adjustment

Function (Purpose) : Used to enter the adjustment value of the main unit RSPF document tray size adjustment value. SIM53-06 A/D value manual input (for RSPF).

Section : RSPF

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

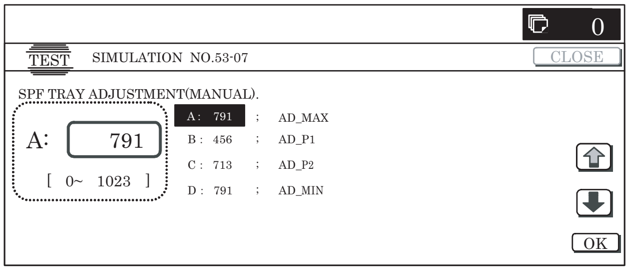
     If there is any item under [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently entered value is set.

<Display item, set range, and default values>

Item	Display item	Guide plate position	Set range	Default value
A	AD_MAX	Maximum position	0 to 1023	791
B	AD_P1	Middle position (L)	0 to 1023	713
C	AD_P2	Middle position (S)	0 to 1023	456
D	AD_MIN	Minimum position	0 to 1023	66

* A/D is 10 bit.



SIMULATION NO.53-07

SPF TRAY ADJUSTMENT(MANUAL).

A: 791

[0~ 1023]

A : 791 ; AD_MAX
B : 456 ; AD_P1
C : 713 ; AD_P2
D : 791 ; AD_MIN

53-8

Purpose : Adjustment

Function (Purpose) : Used to adjust the RSPF scan position.

Section : RSPF

Item : Adjustment

Operation/Procedure

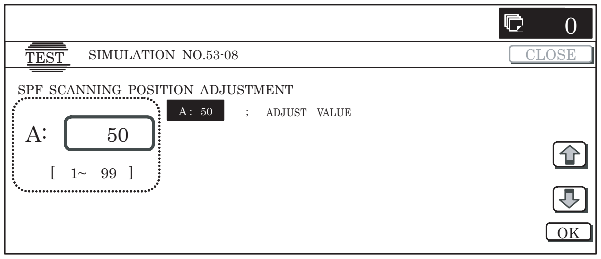
1) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
2) When [OK] button is pressed, the currently entered value is set.

<Display item, set range and default value>

Item	Display item	Description	Set range	Default value
A	ADJUST VALUE	SPF scan position adjustment	1 to 99	50

- When the set value is increased by 1, the distance between the home position and the RSPF scan position is increased by 0.1mm.

- When the set value is changed by 1, the position is shifted by 0.1mm.
- Since the distance of RRCA-S and RSPF scan position is changed, RRCA and RRCA-S are not changed by this adjustment value.



SIMULATION NO.53-08

SPF SCANNING POSITION ADJUSTMENT

A : 50 : ADJUST VALUE

A: 50

[1~ 99]

55

55-1

Purpose : Setting

Function (Purpose) : Used to set the engine soft SW.

Section : PCU

Item : Operation (Specifications)

Operation/Procedure

1) When the machine enters Simulation 55-01, the screen on the right is displayed.

   * On the initial screen, [SW-NO.] button is highlighted.

2) With [SW NO.] button highlighted, enter the SW number with 10-key.

   * Press [C] key to clear the entered values.

3) Press [DATA] button.

   [DATA] button is highlighted and the current set value is displayed.

4) With [DATA] button highlighted, enter the bit data with 10-key.

   When 10-key corresponding to the bit is pressed, the bit data display is switched as shown below.

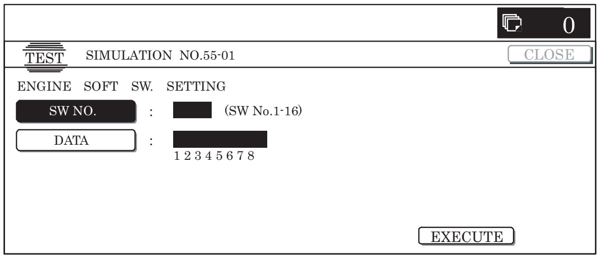
   [1] → [0]

   [0] → [1]

   * Entry of 1 to 8 only is effective.

5) When [EXECUTE] button is pressed, the currently entered data are set.

   After completion of setting, [EXECUTE] button returns to the normal display.



SIMULATION NO.55-01

ENGINE SOFT SW. SETTING

SW NO. : (SW No.1-16)

DATA : 1 2 3 4 5 6 7 8

55-2

Purpose : Setting

Function (Purpose) : Used to set the scanner soft SW

Section : Scanner

Item : Operation (Specifications)

Operation/Procedure

1) When the machine enters Simulation 55-02, the screen on the right is displayed.

   * On the initial screen, [SW-NO.] button is highlighted.

2) With [SW NO.] button highlighted, enter the SW number with 10-key.

   * Press [C] key to clear the entered values.

3) Press [DATA] button.

   [DATA] button is highlighted and the current set value is displayed.

4) With [DATA] button highlighted, enter the bit data with 10-key.

   When 10-key corresponding to the bit is pressed, the bit data display is switched as shown below.

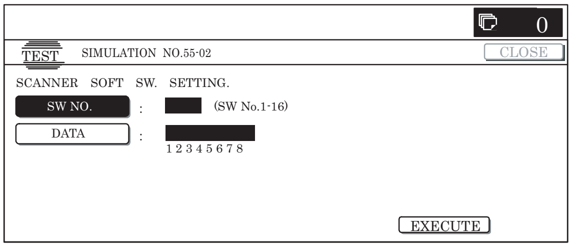
   [1] → [0]

   [0] → [1]

   * Entry of 1 to 8 only is effective.

5) When [EXECUTE] button is pressed, the currently entered data are set.

   After completion of setting, [EXECUTE] button returns to the normal display.



SIMULATION NO.55-02

SCANNER SOFT SW. SETTING.

SW NO. : (SW No.1-16)

DATA : 1 2 3 4 5 6 7 8

55-3

Purpose : Setting

Function (Purpose) : Used to set the controller soft SW.

Section : MFP

Item : Operation (Specifications)

Operation/Procedure

1) When the machine enters Simulation 55-03, the screen on the right is displayed.

   * On the initial screen, [SW-NO.] button is highlighted.

2) With [SW NO.] button highlighted, enter the SW number with 10-key.

   * Press [C] key to clear the entered values.

3) Press [DATA] button.

   [DATA] button is highlighted and the current set value is displayed.

4) With [DATA] button highlighted, enter the bit data with 10-key.

   When 10-key corresponding to the bit is pressed, the bit data display is switched as shown below.

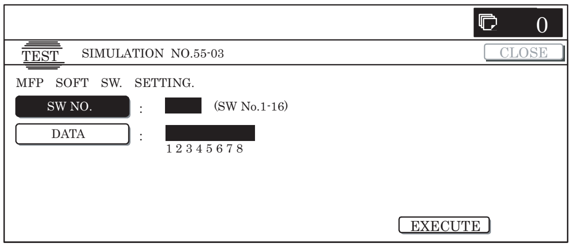
   [1] → [0]

   [0] → [1]

   * Entry of 1 to 8 only is effective.

5) When [EXECUTE] button is pressed, the currently entered data are set.

   After completion of setting, [EXECUTE] button returns to the normal display.



SIMULATION NO.55-03

MFP SOFT SW. SETTING.

SW NO. : (SW No.1-16)

DATA : 1 2 3 4 5 6 7 8

56

56-1

Purpose : Data transfer

Function (Purpose) : Used to execute data transfer.

Section : MFP

Item : Data transfer

Operation/Procedure

1) Select an item of data transfer.
   - * The selected button is highlighted and "ENABLE" is displayed in the corresponding display section.
   - * When another button is selected, the newly selected button is highlighted and "ENABLE" is displayed in the corresponding display section. The previously selected button returns to the normal display and "DISABLE" is displayed in the corresponding display section.
   - * On the initial screen, [ALL → HDD] is highlighted. Only one button can be selected.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

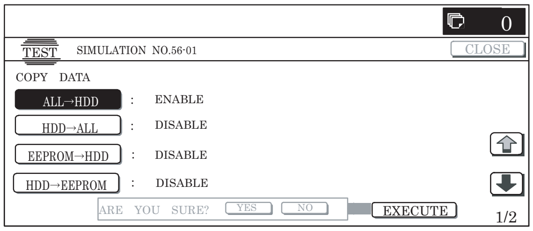
     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.
2) When [EXECUTE] button is pressed, it is highlighted and [YES] and [NO] buttons become active.
3) When [YES] button is pressed, it is highlighted and the data of the highlighted button are transferred.
   - * When [NO] button or [EXECUTE] button is pressed, the display is shifted to the set item select screen.
   - * During execution, "RUNNNING"is displayed in the corresponding display section.
   - * After completion of execution,"COMPLETE"is displayed in the corresponding display section, and reset is executed automatically.

     If the execution is not completed for any reason,"ERROR"is displayed in the corresponding display section. (Rest is not executed.)

<Data transfer item>

Target data	Content
ALL → HDD	All memory contents are transferred to HDD.
HDD → ALL	The contents of HDD are transferred to all the memories.
EEPROM → HDD	Transfer from EEPROM to HDD
HDD → EEPROM	Transfer from HDD to EEPROM
SRAM → HDD	Transfer from SRAM to HDD. If, however, a FAX memory or an option memory (memory for FAX) is installed, the data are transferred to HDD together with the contents of the memory for FAX.
HDD → SRAM	Transfer from HDD to SRAM. If, however, a FAX memory or an option memory (memory for FAX)* is installed, the data are transferred to HDD together with the contents of the memory for FAX.

* If FLASHROM and OP.FLASHROM are not installed, transfer is not executed.



56-2

Purpose : Backup

Function (Purpose) : Used to backup the data (user authentication data, address book, etc.) of EEPROM, SRAM, or HDD to a USB memory and to restore the data.

Section : Memory, HDD

Item : Data

Operation/Procedure

1) Insert a USB memory into the machine.
   - * If a USB memory is not inserted, "INSERT A STORAGE TO THE USB PORT" is displayed. When [OK] button is pressed, the display is shifted to the menu selection screen.
2) Select a desired menu to be executed, and the display is shifted to the execution screen.
   - * When [HDD EXPORT] or [EEPROM & SRAM EXPORT] is selected, the display is shifted to the execution screen.
3) Select a file button to be imported, and the display is shifted to the execution screen.
   - * A file name is displayed on the button. If the file name is of more than 70 characters, only 70 characters are displayed.
   - * The maximum number of buttons is 30 items.
4) Press [EXECUTE] button, and it is highlighted and [YES] and [NO] buttons becomes active from the gray-out display.
   - * Display during importing

     "HDD IMPORT"
   - * Display during exporting

     "HDD EXPORT"
5) Press [YES] button, and it is highlighted and importing is executed.
   - * When [NO] or [EXECUTE] button is pressed, the display is shifted to the execution screen.

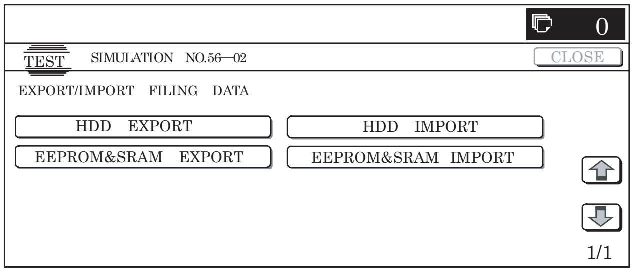
     [EXECUTE] button returns to the normal display.
   - * Message during importing

     “IMPORTING THE DATA. PLEASE WAIT...”
   - * Message during exporting

     "EXPORTING THE DATA. PLEASE WAIT....."
6) When updating is completed, the result is displayed.

   After normal completion, "COMPLETE" is displayed.

   In case of an error completion, "EEROR" is displayed.
   - * When [CA] key or [SYSTEM SETTINGS] key is pressed to exit the simulation, the machine is rebooted.



60

60-1

Purpose : Operation test/Check

Function (Purpose) : Used to check read/write of the expansion DIMM installed to the ICU PWB.

After completion of execution, the result of each slot is displayed on the panel.

ICU PWB image DRAM read/write operation check, check ICU (memory) operation.

Section : Image process (ICU)

Item : Operation

Operation/Procedure

1) When the machine enters Simulation 60-01, the screen on the right is displayed.

   When [EXECUTE] button is pressed, it is highlighted and the test is started.
2) During testing, "SLOT-2:NOW EXECUTING..." is displayed.
3) SLOT-2 test completed
4) SLOT-3 test completed
5) SLOT-4 test completed

   [EXECUTE] button returns to the normal display.

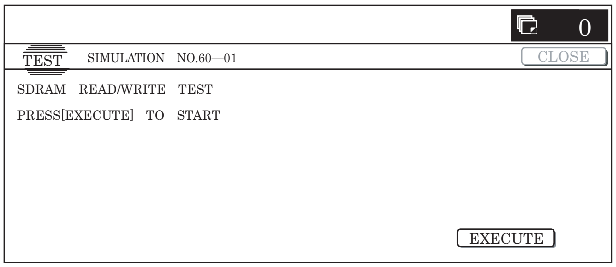
   When the test is normally completed,"OK"is displayed.

<Result display>

Result display	Detail
OK	Success
NG	Fail
NG (SDRAM IS NOT IN SLOT4)	Fail: SLOT4 (standard) is unconnected and SLOT3 (option) is connected.
NONE	Not installed (including DIMM trouble)

<SLOT descriptions>

SLOT	Descriptions
SLOT1	Memory connected to the MFP controller. Since it is of only the system area, it is excluded from the targets of Red/Write check.
SLOT2	Memory connected to the MFP controller. Read/Write check is executed for some memory area.
SLOT3	• Option memory connected to the ICU-ASIC. • Since SLOT4 (standard) memory is not installed, Read/Write check cannot be executed.
SLOT4	Standard memory connected to the ICU-ASIC



SDRAM READ/WRITE TEST

PRESS[EXECUTE] TO START

60-2

Purpose : Setting

Function (Purpose) : Used to set the data of onboard SDRAM.

Section :

Item :

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

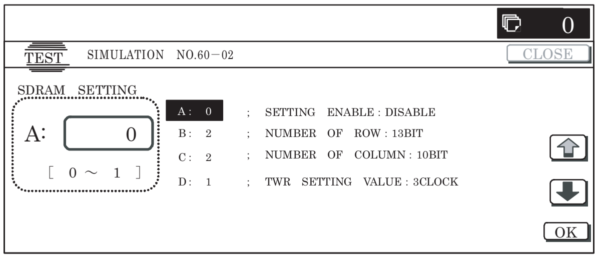
   If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.
3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the currently set data are set.

<Set range and default value of each set value>

Item	Display		Content		Set range	Default value
A	SETTING ENABLE	DISABLE	SDRAM setting change flag	DDR setting of onboard SPD	0	0
		ENABLE		DDR setting after the following B.	1	
B	NUMBER OF ROW	11BIT	ROW address width		0	2
		12BIT			1	
		13BIT			2	
C	NUMBER OF COLUMN	8BIT	COLUMN address width		0	2
		9BIT			1	
		10BIT			2	
		11BIT			3	
		12BIT			4	
D	TWR SETTING VALUE	2CLOCK	TWR setting value		0	1
		3CLOCK			1	
		4CLOCK			2	
		5CLOCK			3	

Item	Display		Content	Set range	Default value
E	TRAS SETTING VALUE	4CLOCK	TRAS setting value	0	2
		5CLOCK		1	
		6CLOCK		2	
		7CLOCK		3	
F	TRC SETTING VALUE	6CLOCK	TRC setting value	0	3
		7CLOCK		1	
		8CLOCK		2	
		9CLOCK		3	
		10CLOCK		4	
G	TRCD SETTING VALUE	2CLOCK	TRCD setting value	0	1
		3CLOCK		1	
		4CLOCK		2	
		5CLOCK		3	
H	TRP SETTING VALUE	2CLOCK	TRP setting value	0	1
		3CLOCK		1	
		4CLOCK		2	
		5CLOCK		3	
I	TFRC SETTING VALUE	7CLOCK	TFRC setting value	0	3
		8CLOCK		1	
		:		:	
		20CLOCK		13	
J	CAS LATENCY	CL=2	CAS latency	0	1
		CL=2.5		1	
		CL=3		2	
K	TOTAL NUMBER OF MBYTES ONBOARD DDR	NONE	Total capacity of onboard DDR	0	1
		128MBYTE		1	
		256MBYTE		2	
L	NUMBER OF ONBOARD-DDR CS-BANK	NON	Total capacity of onboard DDR	0	1
J	CAPACITY	1CHIP SELECT		1	
K	BUFFER TYPE	2CHIP SELECT		2	



SDRAM SETTING

A: 0

[0 ～ 1]

A : 0 ; SETTING ENABLE : DISABLE
B : 2 ; NUMBER OF ROW : 13BIT
C : 2 ; NUMBER OF COLUMN : 10BIT
D : 1 ; TWR SETTING VALUE : 3CLOCK

61

61-01

Purpose : Operation test/Check

Function (Purpose) : The polygon motor rotation and the BD signal detection are checked.

Section : LSU

Item : Operation

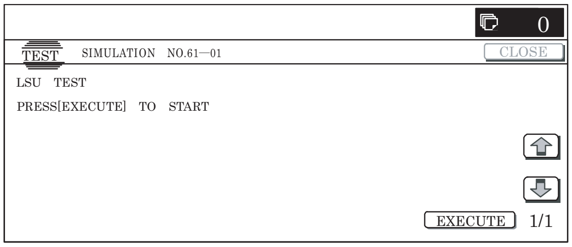
Operation/Procedure

1) When [EXECUTE] button is pressed, the LSU check is started.
2) When checking is normally completed, [OK] is displayed.

   When an error occurs in checking, [NG] is displayed and the detail is displayed.

<Error list>

Display	Content	Operation
LSU TESTRESULT NG: PG	LSU check polygon mirror is abnormal	Operation interruption and end
LSU TESTRESULT NG: K	LSU check K-colored LD emission of light is abnormal	Operation interruption and end
LSU TESTRESULT NG: CL	LSU check CL-colored LD emission of light is abnormal	Operation interruption and end



LSU TEST
PRESS[EXECUTE] TO START

61-4

Purpose : Adjustment

Function (Purpose) : Used to execute self-print of the LSU position adjustment.

Section : LSU

Item : Adjustment

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * When [C] key is pressed, the entered value is cleared.

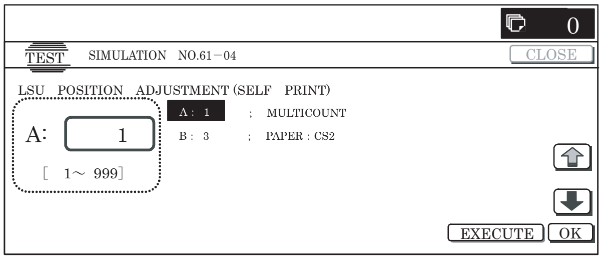
3) When [EXECUTE] button is pressed, it is highlighted and printing is started.

   * After completion of printing, [EXECUTE] button returns to the normal display.
   * When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the value is set to the set item. (The value is not saved to EEPROM and RAM.)
   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during printing, the operation is interrupted.
   * When the machine returns to the ready state after occurrence of an interruption, printing is resumed.

<Set range and default value of each set item>

Item	Display item & Detail of display		Description of item		Set range		Default value
A	MULTICOUNT		Print quantity		1 to 999		1
B	PAPER	MFT	Cassette select	Manual feed	1 to 6	1	3 (CS2)
		CS1		Cassette 1		2	
		CS2		Cassette 2		3	
		CS3		Cassette 3		4	
		CS4		Cassette 4		5	
		LCC		LCC		6	

* Item B is displayed as "Display item: Detail of display."
Example: PAPER:CS1



SIMULATION NO.61－04

LSU POSITION ADJUSTMENT (SELF PRINT)

A: 1

[1～ 999]

A : 1 ; MULTICOUNT

B : 3 ; PAPER : CS2

62

62-1

Purpose : Data clear

Function (Purpose) : Used to execute the hard disk format (except operation manual area).

* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.

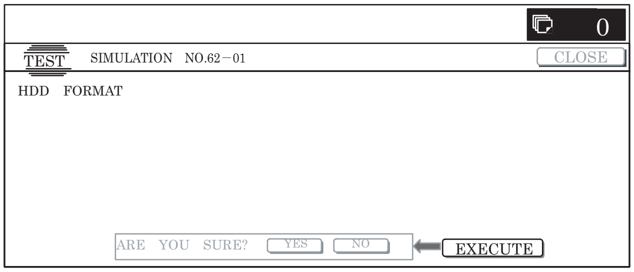
   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.

2) Press [YES] button.

   Execute formatting of the hard disk. [YES] button is highlighted.

   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   * When the hard disk formatting is not completed normally, "HDD FORMAT NG" is displayed.
   * After completion of the hard disk formatting, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   * When [CA] key is pressed during formatting, the operation is interrupted and the simulation is terminated. When [SYSTEM SETTINGS] key is pressed, formatting is interrupted and the display returns to the sub number entry screen.

* When [CA] key or [SYSTEM SETTINGS] key is pressed to exit the simulation, the machine is rebooted.



SIMULATION NO.62－01

HDD FORMAT

ARE YOU SURE?

62-2

Purpose : Operation test/Check

Function (Purpose) : Used to execute the partial check of the hard disk read/write (except operation manual area).

* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

Item : Operation

Operation/Procedure

1) Press [EXECUTE] button.

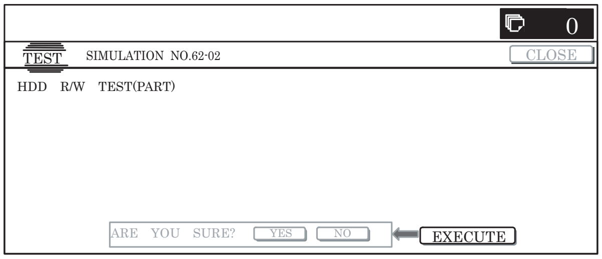
   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.

2) Press [YES] button.

   The procedures (Write → Retrieve → Check for any abnormality.) are executed.

   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   * When the procedures (Write → Retrieve → Abnormality check) are not completed normally, "HDD R/W TEST NG" is displayed.

* When the procedures (Write → Retrieve → Abnormality check) are completed normally, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
* When [CA] key is pressed during the procedures (Write → Retrieve → Check for any abnormality.), the operation is interrupted and the simulation is terminated. When [SYSTEM SETTINGS] key is pressed, the operation is interrupted and the display returns to the sub number entry screen.



62-3

Purpose : Operation test/Check

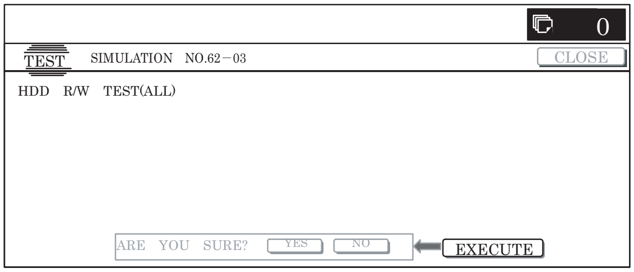
Function (Purpose) : Used to execute read/write check (all areas) of the hard disk.
* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

Item : Operation

Operation/Procedure

1) Press [EXECUTE] button.
   [EXECUTE] button is highlighted and YES] and [NO] buttons become active.
2) Press [YES] button.
   The procedures (Write → Retrieve → Check for any abnormality.) are executed.
   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   * When the procedures (Write → Retrieve → Abnormality check) are not completed normally, "HDD R/W TEST NG" is displayed.
   * When the procedures (Write → Retrieve → Abnormality check) are completed normally, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
   * When [CA] key is pressed during Write → Retrieve, the operation is interrupted and the simulation is terminated. When [SYSTEM SETTGINGS] key is pressed instead, the operation is interrupted and the display is shifted to the sub number entry screen.



62-6

Purpose : Operation test/Check

Function (Purpose) : Used to execute the HDD self-diagnostics.
* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

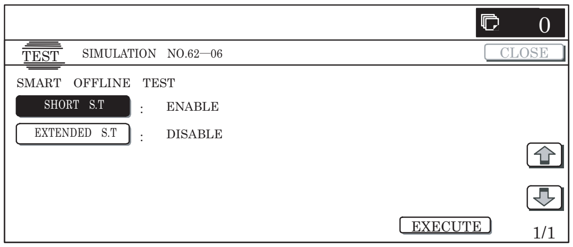
Item : Operation

Operation/Procedure

1) Select an item to execute the self-diagnostics.
   * The selected button is highlighted and "ENABLE" is displayed in the corresponding display section.
   * When another button is selected, the newly selected button is highlighted and "ENABLE" is displayed in the corresponding display section. The previously selected button returns to the normal display and "DISABLE" is displayed in the corresponding display section.
2) When [EXECUTE] button is pressed, it is highlighted and the self-diagnostics is started.
   * During self diagnostics, "EXECUTING..." is displayed in the corresponding display section.
   * After completion of self-diagnostics, [EXECUTE] button returns to the normal display and the result of diagnostics is displayed in the corresponding display section. (In the case of OK, "OK (RESULT:0)" is displayed. In the case of NG, "NG (RESULT: Other than 0)" is displayed.
   * If the operation is not executed or completed for any reason, "ERROR" is displayed in the corresponding display section.

<Self diagnostics method>

Target data	Content
SHORT S.T	Partial check
EXTENDED S.T	All areas check



SHORT S.T : ENABLE
EXTENDED S.T : DISABLE

62-7

Purpose : Operation test/Check

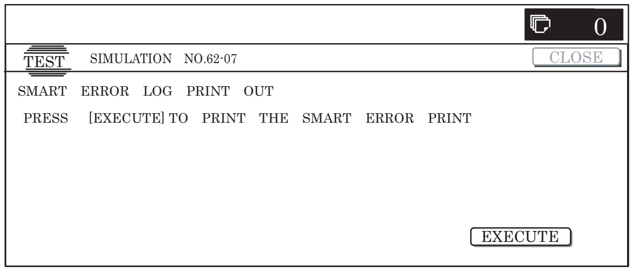
Function (Purpose) : Used to print the self-diagnostics error log.
* Be sure to format the HDD in FAT32.

Section : MFP

Item : Data

Operation/Procedure

1) When the machine enters Simulation 62-07, the following screen is displayed.
   Check that there is A4 paper in the paper feed tray. If not, supply paper.
2) When [EXECUTE] button is pressed, it is highlighted and the error log is printed.
   After completion of self-printing, the display returns to the initial screen.
   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during printing, the operation is interrupted.
   * When the machine returns to the ready state after occurrence of an interruption, printing is resumed.



SIMULATION NO.62-07

SMART ERROR LOG PRINT OUT

PRESS [EXECUTE] TO PRINT THE SMART ERROR PRINT

62-8

Purpose : Data clear

Function (Purpose) : Used to format the hard disk excluding the system area and operation manual area.

* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.

2) Press [YES] button.
3) The hard disk (excluding the system area) is formatted. [YES] button is highlighted.

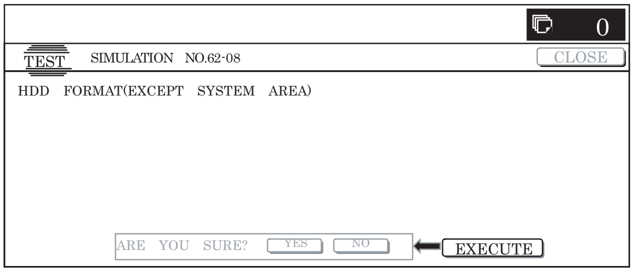
   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

   * During formatting the hard disk (excluding the system area), [EXECUTE] button is highlighted and "HDD FORMAT (EXCEPT SYSTEM AREA) EXECUTING..." is displayed.

   * If formatting of the hard disk (excluding the system area) is not completed normally, " HDD FORMAT (EXCEPT SYSTEM AREA) NG" is displayed.

   * When formatting of the hard disk (excluding the system area) is completed, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

   * When [CA] key or [SYSTEM SETTINGS] key is pressed to exit from the simulation are restart.



SIMULATION NO.62-08

HDD FORMAT(EXCEPT SYSTEM AREA)

ARE YOU SURE?

62-10

Purpose : Data clear

Function (Purpose) : Used to delete the job completion list. (The job log data are also deleted.)

* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.

2) Press [YES] button.

   The job log data are deleted. [YES] button is highlighted.

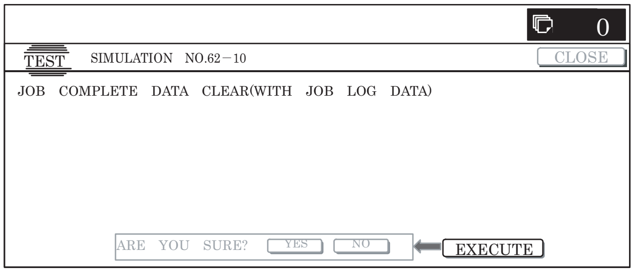
   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

   * During delete operation of the job log data [EXECUTE] button is highlighted and "EXECUTING..." is displayed.

   * If delete of the jog log data is not completed normally, "NG" is displayed.

   * After completion of delete of the job log data, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

   * When [CA] key is pressed during delete operation, the operation is interrupted and the simulation is terminated. When [SYSTEM SETTINGS] key is pressed, the operation is interrupted and the display returns to the sub number entry screen.



SIMULATION NO.62−10

JOB COMPLETE DATA CLEAR(WITH JOB LOG DATA)

ARE YOU SURE?

62-11

Purpose : Data clear

Function (Purpose) : Used to delete the document filing data.

* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.

2) Press [YES] button.

   The document filing data are deleted.

   [YES] button is highlighted.

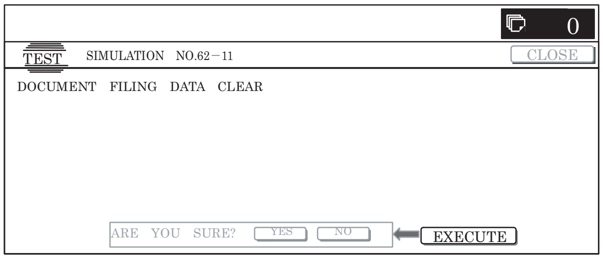
   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

   * During delete of the document filing data, [EXECUTE] button is highlighted and "DOCUMENT FILING DATA CLEAR EXECUTING..." is displayed.

   * If delete of the document filing data is not completed normally, "NG" is displayed.

   * After completion of delete of the document filing data, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

   * When [CA] key is pressed during delete operation, the operation is interrupted and the simulation is terminated. When [SYSTEM SETTINGS] key is pressed, the operation is interrupted and the display returns to the sub number entry screen.



SIMULATION NO.62−11

DOCUMENT FILING DATA CLEAR

ARE YOU SURE?

62-12

Purpose : Data clear

Function (Purpose) : Used to set Enable/Disable of auto format in HDD trouble.

* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

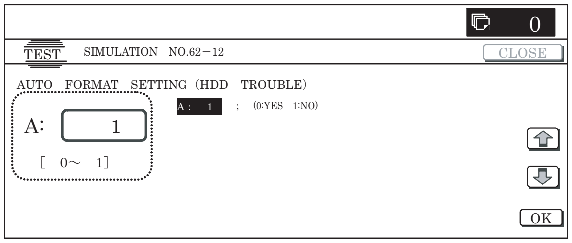
Item : Clear

Operation/Procedure

1) When the machine enters the simulation, the screen on the right is displayed.
2) Enter the set value with 10-key.
   * Press [C] key to clear the entered values.
3) When [OK] button, [COLOR], or [BLACK] key is pressed, it is highlighted and the current entered value is saved to EEPROM and RAM.

<Descriptions of buttons, set range, and default values>

Item		Content		Set range	Default value
A	(0: YES, 1: NO)	0	Auto format Enable	0 to 1	1 (Disable)
		1	Auto format Disable		



AUTO FORMAT SETTING (HDD TROUBLE)

A : 1 ; (0:YES 1:NO)

A: 1

[0~ 1]

62-13

Purpose : Data clear

Function (Purpose) : Used to format the hard disk (operation manual area only).

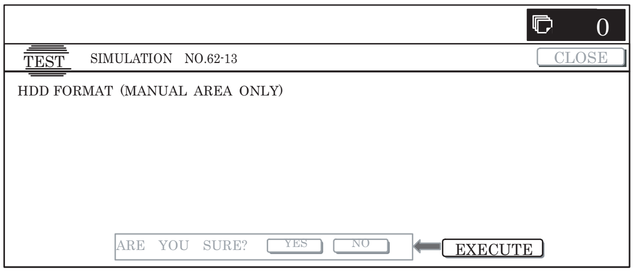
* Be sure to format the HDD in FAT32.

Section : MFP (HDD)

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.
   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.
2) Press [YES] button.
3) The hard disk (operation manual area only) is formatted. [YES] button is highlighted.
   - * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   - * During formatting the hard disk (operation manual area only), [EXECUTE] button is highlighted and "HDD FORMAT (MANUAL AREA ONLY) EXECUTING..." is displayed.
   - * If formatting of the hard disk (operation manual area only) is not completed normally, "HDD FORMAT (MANUAL AREA ONLY) NG" is displayed.
   - * When formatting of the hard disk (operation manual area only) is completed, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.
   - * When [CA] key or [SYSTEM SETTINGS] key is pressed to exit the simulation, the machine is rebooted.



HDD FORMAT (MANUAL AREA ONLY)

ARE YOU SURE?

63

63-1

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : Used to check the following values related to shading for RGB and OC. (3 x 2 = 6 kinds)

Section : Scanner (Exposure)

Item : Operation

Operation/Procedure

1) Select a color button to be displayed.
   The shading set value of the selected button is displayed.
   - * When [B](Blue), [G](Green), or [R](Red) button is selected, the selected button is highlighted and the adjustment value of the selected color is displayed.
   - * Only one color button can be selected, and the selected button is highlighted. In the initial state, [B] is selected.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.
     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.

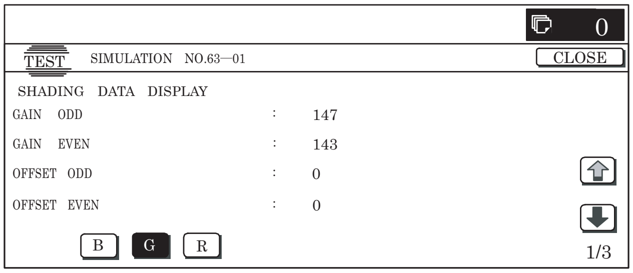
* When [CLOSE] button is pressed, the display shifts to the copy basic screen of simulation.

* Copying can be performed also by pressing [COLOR]/[BLACK] key.

<Display item and description>

Display item	Description	Remark
GAIN ODD	Gain adjustment value (ODD)	
GAIN EVEN	Gain adjustment value (EVEN)	
OFFSET ODD	Offset value (ODD)	
OFFSET EVEN	Offset value (EVEN)	
SMP AVE ODD	Reference plat sampling average value (ODD)	
SMP AVE EVEN	Reference plat sampling average value (EVEN)	
TARGET VALUE	Target value	
BLACK LEVEL	Black output level	
ERROR CODE	Error code (0, 1 to 4)	0: No error 1: STAGE1. Over the loop number 2: STAGE2. The target value is less than the specified level. 3: STAGE3. The gain set value is negative. 4: END is not asserted.
RSPF WHITE LEVEL 1ST	First scan, RSPF white reference level	

Display item	Description	Remark
RSPF WHITE LEVEL 2ND	Second and later scan, RSPF white reference level	



SIMULATION NO.63−01

SHADING DATA DISPLAY

GAIN ODD : 147

GAIN EVEN : 143

OFFSET ODD : 0

OFFSET EVEN : 0

* On the screen, [G] is pressed.

63-2

Purpose : Adjustment

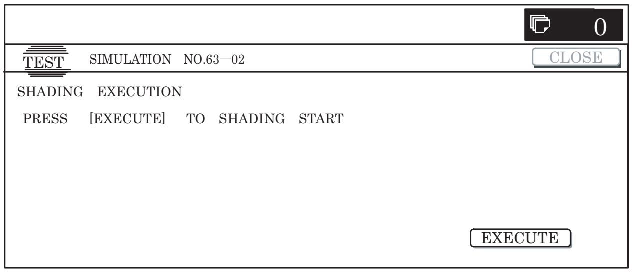
Function (Purpose) : Used to execute shading forcibly.

Section : Scanner

Item : Operation

Operation/Procedure

1) When [EXECUTE] button is pressed, it is highlighted and shading is started.
   - * During execution, "SHADING EXECUTING..." is displayed.
   - * When [EXECUTE] button is pressed during execution, the operation is interrupted.
   - * When shading is completed normally, [EXECUTE] button returns to the normal display and "COMPLETED" is displayed.
   - * When [SYSTEM SETTINGS] key is pressed during other than printing, the display returns to the sub number entry screen.



SIMULATION NO.63−02

SHADING EXECUTION

PRESS [EXECUTE] TO SHADING START

63-3

Purpose : Adjustment

Function (Purpose) : Used to execute the gamma correction and density conversion for RGB image data inputted from the CCD. Gamma correction 1 of the SCAN ASIC and the set value of color correction are set by calculating from the image data.

Section : Scanner (scan)

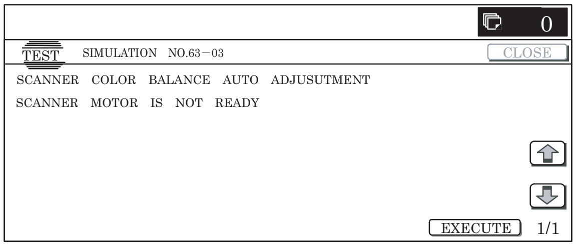
Item : Image quality (Color balance)

Operation/Procedure

1) When a color button is selected, the adjustment value of the selected color is displayed.
   - * When [B] (Blue), [G] (Green), or [R] (Red) button is selected, the selected button is highlighted and the adjustment value of the selected color is displayed.
   - * Only one color button can be selected, and the selected button is highlighted. In the initial state, [B] is selected.
   - * If there is a page over [↑], an active display is shown and the page moves up. If there is no page upward, the display grays out and the operation is invalid.

     If there is a page under [↓], an active display is shown and the page moves down. If there is no page downward, the display grays out and the operation is invalid.
2) Press a button to be executed. (In this example, [OC] button is pressed and the color auto adjustment execution screen is displayed.)
3) Press [EXECUTE] button and it is highlighted and the color auto adjustment is executed.
   - * When [EXECUTE] button is pressed during the automatic adjustment, the automatic adjustment is interrupted.
   - * Process contents during execution
     - a) Sampling setting
     - b) Scan request
     - c) Waiting for reaching the document lead edge
     - d) Sampling end
     - e) Sampling result acquisition
     - f) Calculation for sampling result
     - g) Calculation result save

When a scanner motor error occurs (during execution):



SIMULATION NO.63−03

SCANNER COLOR BALANCE AUTO ADJUSUTMENT

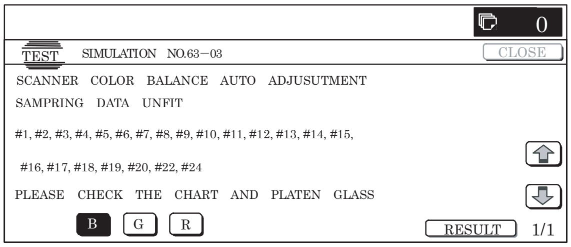
SCANNER MOTOR IS NOT READY

When auto adjustment error occurs:

* When an error occurs, all the error patch numbers are displayed.

If there is no error after selection of a color, the screen is similar to the initial screen. Only the color of an error is displayed as the above error display.

* When the operation is completed normally, "COMPLETE" is displayed. When [RESULT] button is pressed, the display returns to the initial screen. (The calculation result of normal completion is displayed.)



SIMULATION NO.63−03

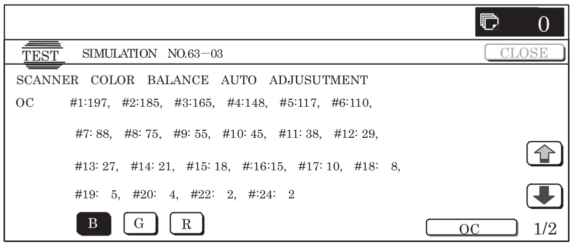
SCANNER COLOR BALANCE AUTO ADJUSUTMENT

SAMPRING DATA UNFIT

#1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13, #14, #15,

#16, #17, #18, #19, #20, #22, #24

PLEASE CHECK THE CHART AND PLATEN GLASS



SIMULATION NO.63−03

SCANNER COLOR BALANCE AUTO ADJUSUTMENT

OC #1:197, #2:185, #3:165, #4:148, #5:117, #6:110,

#7: 88, #8: 75, #9: 55, #10: 45, #11: 38, #12: 29,

#13: 27, #14: 21, #15: 18, #:16:15, #17: 10, #18: 8,

#19: 5, #20: 4, #22: 2, #:24: 2

63-5

Purpose : Adjustment

Function (Purpose) : Used to reset the gamma correction and color correction parameters of the SCAN ASIC.

Section : Scanner

Item : Clear

Operation/Procedure

1) When a touch panel button to execute the standard reset is pressed ([SIDE A(OC)] in this example), the selected button is highlighted and [EXECUTE] button becomes active from the gray-out display.
   - * When the selected button is pressed again, selection is canceled and the button returns to the normal display.
   - * If no button is selected for standard reset, [EXECUTE] button grays out.
   - * Two or more items can be selected for standard reset.
2) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.
3) Press [YES] button.

   The scanner color balance standard value reset is executed.

   [YES] button is highlighted.

* When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

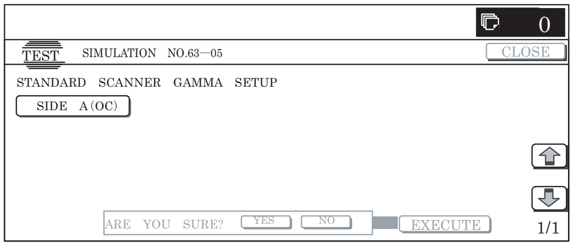
* The restored data are saved to EEPROM and RAM.

* During the scanner color balance standard value reset, [EXECUTE] and [YES] buttons are highlighted.

* After completion of the scanner color balance standard value reset delete, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

<Standard value reset item>

1	SIDE A (OC)	Copy gamma correction 1 and color correction coefficient
2		TWAIN gamma correction 1 and color correction coefficient
3		Auto adjustment gamma correction 1 and color correction coefficient



STANDARD SCANNER GAMMA SETUP

ARE YOU SURE?

63-6

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : Used to scan the engine color balance auto adjustment pattern and to display the sampling result.

Section : Image process (ICU)

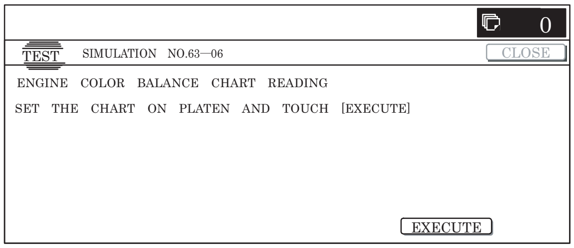
Item : Image quality (Color balance)

Operation/Procedure

1) Put the chart self-printed with SIM46-21 on the glass table, and press [EXECUTE] button. Sampling is started. (When [EXECUTE] button is pressed during execution, the operation is interrupted.)
   - * During sampling, [EXECUTE] button is highlighted.
   - * The sampling value of each patch from the high density side is displayed as the result.

     When [K][C][M][Y] button is pressed on the sampling result display screen, the data of each color are displayed.

     Only one color button can be selected. (In the initial screen, [K] is selected.)
     - * After completion of sampling, [EXECUTE] button returns to the normal display.



ENGINE COLOR BALANCE CHART READING

SET THE CHART ON PLATEN AND TOUCH [EXECUTE]

63-7

Purpose : Setting

Function (Purpose) : Used to display and register the engine auto density adjustment scanner target value.

Section : Image process (ICU)

Item : Image quality (Color balance)

Operation/Procedure

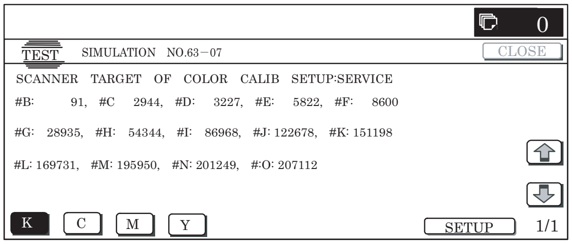
1) When the machine enters Simulation 63-07, the following screen is displayed.
   - * Press [K][C][M][Y] button to display the data of each color. Only one color button can be selected. The selected button is highlighted. (In the initial screen, [K] is selected.)
2) When [SETUP] button is pressed, the display is shifted to the sampling start screen.

   Put the chart self-printed with SIM46-21 on the glass table, and press [EXECUTE] button. [EXECUTE] button is highlighted and the sampling screen is displayed.
3) After completion of sampling, the sampling result is displayed. When [REPEAT] button is pressed, the display is shifted to the sampling start screen.
4) When [OK] button is pressed, the displayed result of sampling is saved to EEPROM and RAM as the target value.

<Display data content>

Display data	Display content
B	Point B target value
C	Point C target value
D	Point D target value
E	Point E target value
F	Point F target value
G	Point G target value
H	Point H target value
I	Point I target value
J	Point J target value
K	Point K target value
L	Point L target value
M	Point M target value
N	Point N target value
O	Point O target value
BASE	Base sampling value

* BASE is displayed only on the sampling result display screen.



SIMULATION NO.63−07

SCANNER TARGET OF COLOR CALIB SETUP:SERVICE

#B: 91, #C 2944, #D: 3227, #E: 5822, #F: 8600

#G: 28935, #H: 54344, #I: 86968, #J: 122678, #K: 151198

#L: 169731, #M: 195950, #N: 201249, #:O: 207112

63-8

Purpose : Setting

Function (Purpose) : Used to execute the standard value reset of the engine auto adjustment scanner target value (for servicing).

Section : Image process (ICU)

Item : Image quality (Color balance)

Operation/Procedure

1) Press [EXECUTE] button.

   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.

2) Press [YES] button.

   The standard value reset of the engine auto adjustment scanner target value is executed. [YES] button is highlighted.

   * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

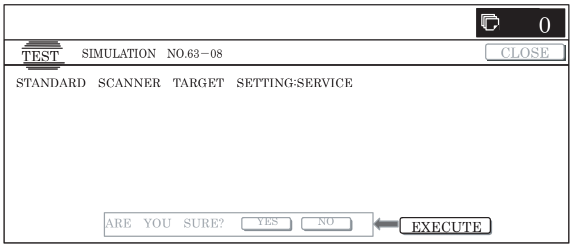
   * The restored data are saved to EEPROM and RAM.

   * During execution of the standard value reset of the engine auto adjustment scanner target value, [EXECUTE] and [YES] buttons are highlighted.

   * After completion of the standard value reset of the engine auto adjustment scanner target value, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.

<Standard value reset item>

1	Auto density adjustment target value (KCMY)



SIMULATION NO.63−08

STANDARD SCANNER TARGET SETTING:SERVICE

63-11

Purpose : Setting

Function (Purpose) : Used to set the factory target color balance in the auto color balance adjustment (SIM46-24).

Section : Scanner (Scanning)

Item : Image quality

Operation/Procedure

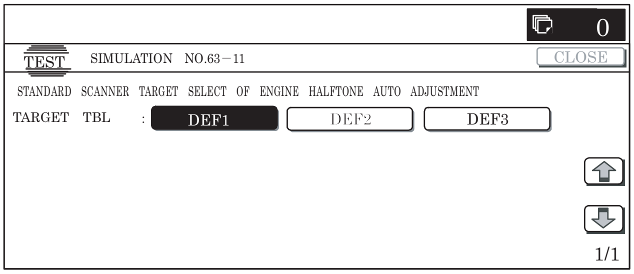
1) When the machine enters Simulation 63-11, the button of the current set value of the target value table is highlighted.

2) When the button of the target value to be changed ([DEF2] button in this example) is pressed, it is highlighted and the set value is saved to EEPROM and RAM.

   * Only one item can be selected.

<Display data item description>

Item	Set value	Content	Default value
Target value table select	DEF1	DEF1 mode setting	DEF1
	DEF2	DEF2 mode setting	
	DEF3	DEF3 mode setting	



SIMULATION NO.63−11

STANDARD SCANNER TARGET SELECT OF ENGINE HALFTONE AUTO ADJUSTMENT

TARGET TBL :

64

64-1

Purpose : Operation test/Check

Function (Purpose) : Used to execute self-print (Color mode).

Section : Printer

Item : Operation

Operation/Procedure

1) Press [K][C][M][Y] button to select a color.

   The selected button is highlighted. When the highlighted button is pressed, it returns to the normal display. (Two or more buttons can be selected.)

2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

4) When [EXECUTE] button is pressed, the currently set self-print is started.

   [EXECUTE] button remains highlighted during self-printing, and returns to the normal display after completion of self-printing.

   * When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the value is set to the set item. (The value is not saved to EEPROM and RAM.)

   * When [C], [CA], or [SYSTEM SETTINGS] key is pressed during self-printing, the operation is interrupted.

   * When the machine returns to the ready state after occurrence of an interruption (paper empty, jam, etc.), self-printing is resumed.

   * When paper is selected which does not satisfy the paper feed and paper exit conditions, printing cannot be made.

<Set item description>

Item	Display item		Description of item		Set range		Default value	Writing
A	PRINT PATTERN (1, 2, 9 ~ 11, 14 ~ 19)		Print pattern specification (* For details, refer to the following.)		1 to 20 (Only 1, 2, 9 to 11, and 14 to 19 can be printed.)		1	Yes
B	DOT1 (DOT1>=2 IF A : 2, 11)		Print dot number setting (Self print patter: m by n)		Pattern 2, 11: 2 to 255 Other than above: 1 to 255		1	Yes
C	DOT2 (DOT2>=2 IF A : 2, 11)		Empty dot number setting (Self print patter: m by n)		Pattern 2, 11: 2 to 255 Other than above: 0 to 255		254	Yes
D	DENSITY (FIXED"255" IF A : 9)		Print gradation specifications		Pattern 9: 255 (fixed) Other than above: 1 to 255		255	Yes
E	MULTI COUNT		Print quantity		1 to 999		1	No
F	EXPOSURE (2 ~ 8 IF A : 14 ~ 19)	THROUGH	Exposure mode specifications	No process (Through)	Pattern 14 to 19: 2 to 8 Other than above: 1 to 8	1	8 (STANDARD DITCH)	Yes
		CHAR/PIC		Text/Printed Photo		2		
		CHAR/PRPIC		Text/Photograph		3		
		CHAR		Text		4		
		PRINT PIC		Printed Photo		5		
		PRINT PAPER		Photograph		6		
		MAP		Map		7		
		STANDARD DITCH		Dither without correction		8		
G	PAPER	MFT	Cassette select	Manual feed	1 to 6	1	2 (CS1)	No
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
H	DUPLEX	YES	Duplex print select	Select	0 to 1	0	1 (NO)	No
		NO		Not select		1		
I	PAPER TYPE	PLAIN	Paper type	Plain paper	1 to 4	1	1 (PLAIN)	No
		HEAVY		Heavy paper		2		
		OHP		OHP		3		
		ENVELOPE		Envelope		4		

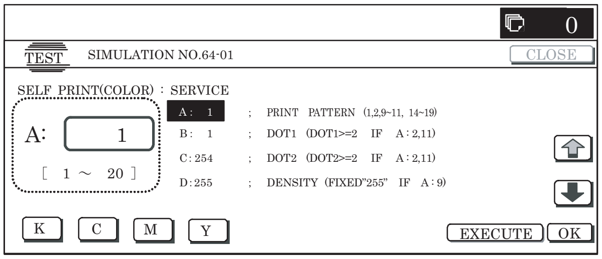
* Paper feed condition PLAIN: Cassette/Manual feed. For the other, manual feed only.

* Items F, G, H, I are displayed as "Display item: Detail of display."
Example: PAPER:CS1

<Detailed descriptions of print pattern at item A>

NO.	Content	Pattern size	Pattern forming section	Color select		Gradation select	Exposure select	M parameter		N parameter		Remark
				Condition	When NO			Enable/ Disable	Default value	Enable/ Disable	Default value	
1	Grid pattern	All surface	LSU-ASIC	○	K only	○	×	○	1	○	254	• All colors are selected in the print width of 100 or more (Print in 3 colors (CMY), print is started at 4mm from the paper lead edge.
2	Mesh print			○	K only	○	×	○	2	○	2	–
3	16 gradations: sub scan	Sub fixed		○ (up to 3 colors)	K only	No	×	×		×		• When all colors are selected, print is made in CMY. • 16-gradattion print • Gradation change for every 256dot.
4	16 gradations: main scan	Main fixed		○ (Up to 3 colors)	K only	No	×	×		×		
5	Even pitch pattern (MBYN): sub scan	All surface		○	K only	○	×	○	1	○	4	–
6	Even pitch pattern (MBYN): main scan											
7	4-color overlap even pitch pattern (MBYN): sub scan			× (4-color fixed)	–	○	×	○	1	○	4	–
8	4-color overlap even pitch pattern (MBYN): main scan											
9	Each color 10% area (A4/4R) density print	Fixed range		× (4-color fixed)	–	○	×	○	10	×		• Each interval is 41.86MM(989dot) • When M is outside 1 to 13%, it is rounded. • [K] print is started at 17mm from the paper lead edge.
10	8-color band print			× (4-color fixed)	–	○	×	×		×		–
11	4-color mesh print	All surface (Each color 1/4)		× (4-color fixed)	–	○	×	○	2	○	2	• Each color print is made for every 1/4 of sub scan paper size. • When N=0, 4-color all surface print.
12	–	–	Input process (IMG-ASIC preprocess)	–	K only (For through/ default, C only.)	–	–	–	–	–	–	–
13	–			–		–	–	–	–	–	–	–
14	256 gradations: sub scan	Sub fixed		○ (up to 3 colors)		No	○	×		×		• When all colors are selected, print is made in CMY. • Print is made from 255 gradations in the range of 0 to 254 gradations. • Print in 256 gradations. • Print is started at 5mm from the paper lead edge.
15	16 gradations +MBYN (Center gradation section only): sub scan	Sub fixed	IMG-ASIC	○ (up to 3 colors)	K only	No	○	○	2	○	2	• When all colors are selected, print is made in CMY. • Print in 16 gradations. • Gradation is changed for every 256dot.
16	16 gradations +MBYN (Center gradation section only): main scan	Main fixed		○ (up to 3 colors)	K only	No	○	○	2	○	2	

NO.	Content	Pattern size	Pattern forming section	Color select		Gradation select	Exposure select	M parameter		N parameter		Remark
				Condition	When NO			Enable/ Disable	Default value	Enable/ Disable	Default value	
17	All background (Half tone)	All surface	Half tone (IMG-ASIC after-process)	○ (up to 3 colors)	K only	○	○	×		×		• When all colors are selected, print is made in CMY.
18	256-gradation pattern (Other dither)	Fixed range		○ (up to 3 colors)	K only	No	○	×		×		• When all colors are selected, print is made in CMY. • Print is made for 16 gradations in the main scan direction, and for the next 16 gradations, in return. (16 x 16 patch print) • Print is started at 5mm from the paper lead edge. • Print is started from 255 gradation in the range of 0 to 254 gradations.
19	256-gradation pattern (Dither for text)	Fixed range		× (up to 3 colors)	K only	No	○	×		×		
20	4-color grid pattern (Cross): main/sub scan	All surface	Controller (memory)	× (4-color fixed)	–	×	×	×	×	×	117	–



SELF PRINT(COLOR) : SERVICE

A: 1

[1 ~ 20]

A : 1 ; PRINT PATTERN (1,2,9~11, 14~19)
B : 1 ; DOT1 (DOT1>=2 IF A : 2,11)
C : 254 ; DOT2 (DOT2>=2 IF A : 2,11)
D : 255 ; DENSITY (FIXED"255" IF A : 9)

64-2

Purpose : Adjustment/Setup/Operation data output/ Check (Display/Print)

Function (Purpose) : Used to print the density adjustment pattern.

Section : Printer

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * When [C] key is pressed, the entered value is cleared.

3) When [EXECUTE] button is pressed, it is highlighted and the main scan direction registration adjustment pattern is printed.

   After completion of printing, [EXECUTE] button returns to the normal display.

   * When [OK], [↑], [↓], [EXECUTE] button, [COLOR], or [BLACK] key is pressed, the value is saved to EEPROM and RAM.

   * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during printing, the operation is interrupted.

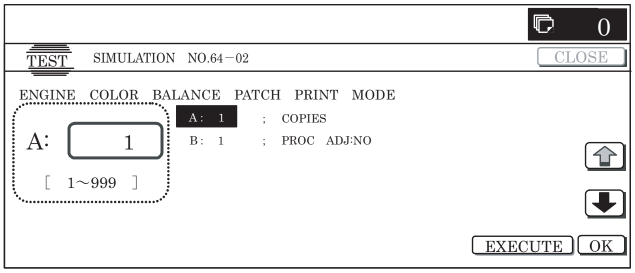
   * When the machine returns to the ready state after occurrence of an interruption, self-printing is resumed.

<Description of item>

Item	Display item & Detail of display		Content		Set range	Default value
A	COPIES		Print quantity		1 to 999	1
B	PROC ADJ	YES	0	The half tone process control correction value is added.	0 to 1	1
		NO	1	The half tone process control correction value is not added.		

* When PROC ADJ is set to YES, the pattern with the half tone process control correction value added is printed after execution of high density process control.

* Item B is displayed as "Display item: Detail of display."
Example:PROC ADJ:NO



ENGINE COLOR BALANCE PATCH PRINT MODE

A: 1

[1~999]

A : 1 ; COPIES
B : 1 ; PROC ADJ:NO

64-3

Purpose : Operation test/Check

Function (Purpose) : Used to execute self-print. (BW mode)

Section : Printer

Item : Operation

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.
   - * When [C] key is pressed, the entered value is cleared.

3) When [EXECUTE] button is pressed, it is highlighted and printing is started.
   - * After completion of printing, [EXECUTE] button returns to the normal display.
   - * When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the value is set to the set item. (The value is not saved to EEPROM and RAM.)
   - * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] key is pressed during printing, the operation is interrupted.
   - * When the machine returns to the ready state after occurrence of an interruption, printing is resumed.

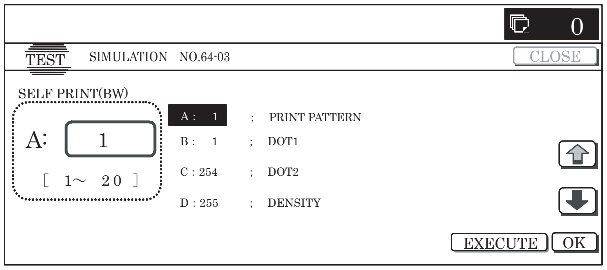
<Description of item>

Item	Display item & Detail of display		Description of item		Set range		Default value	Writing
A	PRINT PATTERN (1,2,9 ~ 11, 14 ~ 19)		Print pattern specification (* For details, refer to below.)		1 to 20 (Only 1, 2, 9 to 11, and 14 to 19 can be printed.)		1	Yes
B	DOT1 (DOT1>=2 IF A : 2, 11)		Print dot number setting (Self print pattern: for M BY N)		Pattern 2, 11: 2 to 255 Other than above: 1 to 255		1	Yes
C	DOT2 (DOT2>=2 IF A : 2, 11)		Space dot number setting (Self print pattern: for M BY N)		Pattern 2, 11: 2 to 255 Other than above: 0 to 255		254	Yes
D	DENSITY (FIXED"255" IF A : 9)		Print gradation specification		Pattern 9: 255 (fixed) Other than above: 1 to 255		255	Yes
E	MULTI COUNT		Print quantity		1 to 999		1	No
F	EXPOSURE (2 ~ 8 IF A : 14 ~ 19)	THROUGH Exposure mode specification	No process (Through)		Pattern 14 to 19: 2 to 8 Other than above: 1 to 8	1	8 (STANDARD DITCH)	Yes
		CHAR/PIC	Text/Printed Photo			2		
		CHAR/PRPIC	Text/Photograph			3		
		CHAR	Text			4		
		PRINT PIC	Printed Photo			5		
		PRINT PAPER	Photograph			6		
		MAP	Map			7		
		STANDARD DITCH	Dither without correction			8		
G	PAPER	MFT	Paper feed tray select	Manual feed	1 to 6	1	2 (CS1)	No
		CS1		Cassette 1		2		
		CS2		Cassette 2		3		
		CS3		Cassette 3		4		
		CS4		Cassette 4		5		
		LCC		LCC		6		
H	DUPLEX	YES	Duplex print select	Selected	0 to 1	0	1 (NO)	No
		NO		Not selected		1		
I	PAPER TYPE	PLAIN	Paper kind select	Plain paper	1 to 4	1	1 (PLAIN)	No
		HEAVY		Heavy paper		2		
		OHP		OHP		3		
		ENVELOPE		Envelope		4		

- When paper which does not satisfy the paper feed and paper exit conditions is selected, printing cannot be executed.
- Paper feed condition PLAIN: Cassette/Manual. For the other, manual feed only.
- Items F, G, H and I are as "Display item: Detail of display."
  Example: PAPER:CS1

<Detailed description on each print pattern of item A>

NO.	Content	Pattern size	Pattern forming section	Gradation select	Exposure select	M parameter		N parameter		Remark
						Enable/ Disable	Default value	Enable/ Disable	Default value	
1	Grid pattern	All surface	LSU-ASIC	○	×	○	1	○	254	• When all colors are selected in the print width of 100 or more, print is made in CMY (3 colors). • Print is started at 4mm from the paper lead edge.
2	Mesh print	All surface		○	×	○	2	○	2	–
3	16 gradations: sub scan	Sub fixed		No	×	×		×		• When all colors are selected, print is made in CMY. • Print for 16 gradations. • Gradation is changed for every 256 dots.
4	16 gradations: main scan	Main fixed		No	×	×		×		
5	Even pitch pattern (MBYN): sub scan	All surface		○	×	○	1	○	4	–
6	Even pitch pattern (MBYN): main scan									
7	4-color overlap Even pitch pattern (MBYN): sub scan	All surface		○	×	○	1	○	4	–
8	4-color overlap Even pitch pattern (MBYN): main scan									
9	Each color 10% area (A4/4R) density print	Fixing range		○	×	○	10	×		• Each interval is 41.86mm(989dot) • When M is other than 1 to 13%, it is rounded. • K print is started at 17mm from the paper lead edge.
10	8-color band print	Fixing range		○	×	×		×		–
11	4-color Mesh print	All surface (Each color 1/4)		○	×	○	2	○	2	• Each color print is made for every 1/4 of sub scan paper size. • When N=0, 4-color all surface print.
12	–	–	Input process (IMG-ASIC preprocess)	–	–	–	–	–	–	–
13	–	–		–	–	–	–	–	–	–
14	256 gradations: sub scan	Sub fixed		No	○	×		×		• When all colors are selected, print is made in CMY. • Print is started at 255 gradation in the range of 0 to 254 gradations. • Print in 256 gradations. • Print is started at 5mm fromthepaperleadedge.
15	16 gradations+M byN (Center gradation section only): sub scan	Sub fixed	IMG-ASIC	No	×	○	2	○	2	• When all colors are selected, print is made in CMY. • Print in 256 gradations. • Gradation is changed for every 256 dot.
16	16 gradations+M byN (Center gradation section only): main scan	Main fixed		No	×	○	2	○	2	
17	All background (Half tone)	All surface	Half tone (IMG-ASIC after-process)	○	○	×		×		• When all colors are selected, print is made in CMY.
18	256 gradation pattern (Other dither)	Fixing range		No	○	×		×		• When all colors are selected, print is made in CMY. • Print is made for 16 gradations in the main scan direction, and for the next 16 gradations, in return. (16 x 16 patch print). • Print is started at 5mm from the paper lead edge. • Print is started at 255 gradation in the range of 0to254gradations.
19	256 gradation pattern (Dither for text)	Fixing range		No	○	×		×		
20	Frame cross pattern	All surface	Controller (Memory)	×	×	×	×	×	×	–



SIMULATION NO.64-03

SELF PRINT(BW)

A: 1

[1～ 20]

A : 1 ; PRINT PATTERN
B : 1 ; DOT1
C : 254 ; DOT2
D : 255 ; DENSITY

64-4

Purpose : Operation test/Check
Function (Purpose) : Used to execute self-print.
Section : Printer
Item : Operation

Operation/Procedure

1) Select a color with [K][C][M][Y] buttons.

   The selected button is highlighted. When the selected button is pressed again, it returns to the normal display. (Two or more buttons can be selected.)

2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

4) When [EXECUTE] button is pressed, the currently set self-print is started.

   [EXECUTE] button remains highlighted during self-printing.

   After completion of self-printing, it returns to the normal display.

   * When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the value is set to the set item. (The value is not saved to EEPROM and RAM.)

   * When [EXECUTE] button, [C], [CA], or [SYSTEM SETTINGS] key is pressed during printing, the operation is interrupted.

   * When the machine returns to the ready state after occurrence of an interruption (paper empty, jam, etc.), self-printing is resumed.

   * When paper which does not satisfy the paper feed conditions and the paper exit conditions, printing cannot be made.

<Set item description>

Item	Display item & Detail of display		Description of item		Set range		Default value
A	PRINT PATTERN		Print pattern specification (* For details, refer to below.)		1 to 5		3
B	DENSITY		Print gradation specification		1 to 255		128
C	MULTI CONUT		Print quantity		1 to 999		1
D	PAPER	MFT	Paper feed tray select	Manual feed	1 to 6	1	2 (CS1)
		CS1		Cassette 1		2	
		CS2		Cassette 2		3	
		CS3		Cassette 3		4	
		CS4		Cassette 4		5	
		LCC		LCC		6	
E	HALFTONE	PHOTO	Half tone	Photo	0 to 2	0	0 (PHOTO)
		TEXT/GRAPHICS		Text/Graphic		1	
		CAD		Design		2	
F	BIT DEPTH	1BIT	Bit number	1 bit	0 to 1	0	1 (4BIT)
		4BIT		4 bit		1	
G	DITHER	STRAIGHT	Dither correction specification	Straight	1 to 2	1	2 (CALIB)
		CALIB		Calibration		2	

* When print pattern 2 or 5 is selected, items E to G cannot be selected. (Though entry of the value is possible, it is not reflected to setting.)

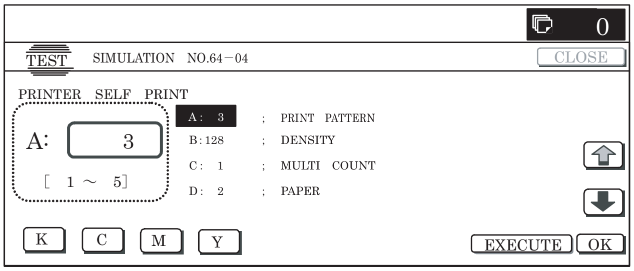
* When paper which does not satisfy the paper feed conditions, printing cannot be made.

* Paper feed condition PLAIN: Cassette/Manual feed. For the other, manual feed only.

* Items D, E, F, G are displayed as "Display item: Detail of display."
Example: PAPER: CS1

<Detailed description for each print in item A>

NO.	Content	Color select		Gradation select/ Dither select	Remark
		Condition	When NOT		
1	256 gradation pattern (COLOR)	○	K only	1: Straight 2: Calibration	C only/ M only/ Y only/ K only/ C & M/ C & Y/ M & Y are executable. For the other, rounded to K only.
2	256 gradation pattern (B/W)	×	K only	1: Straight 2: Calibration	Rounded to K only regardless of COLOR SELECT status.
3	256 gradation pattern (COLOR) (Y-M-C-K continuous)	×	×	1: Straight 2: Calibration	4 pages are continuously printed in the sequence of Y only, M only, C only, and K only.
4	Half tone pattern (COLOR)	○	K only	1 to 255	C only/ M only/ Y only/ K only/ C & M/ C & Y/ M & Y/ C & M & Y are executable. For the other, rounded to K only.
5	Half tone pattern (B/W)	×	K only	1 to 255	Rounded to K only regardless of COLOR SELECT status.



SIMULATION NO.64−04

PRINTER SELF PRINT

A: 3

[1 ～ 5]

A: 3 ; PRINT PATTERN
B: 128 ; DENSITY
C: 1 ; MULTI COUNT
D: 2 ; PAPER

64-5

Purpose : Operation test/Check

Function (Purpose) : Used to execute self print (PCL).

Section : Printer

Item : Operation

Operation/Procedure

1) Select a color with [K][C][M][Y] buttons.

   The selected button is highlighted. When the selected button is pressed again, it returns to the normal display. (Two or more buttons can be selected.)

2) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

3) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

4) When [EXECUTE] button is pressed, the currently set self-print is started.

   [EXECUTE] button remains highlighted during self-printing.

   After completion of self-printing, it returns to the normal display.

   * When [OK], [↑], [↓], [EXECUTE] button, [COLOR], or [BLACK] key is pressed, the value is set to the set item. (The value is not saved to EEPROM and RAM.)
   * When [EXECUTE] button, [C], [CA], or [SYSTEM SETTINGS] key is pressed during printing, the operation is interrupted.
   * When the machine returns to the ready state after occurrence of an interruption (paper empty, jam, etc.), self-printing is resumed.

* When paper which does not satisfy the paper feed conditions and the paper exit conditions, printing cannot be made.

<Set item description>

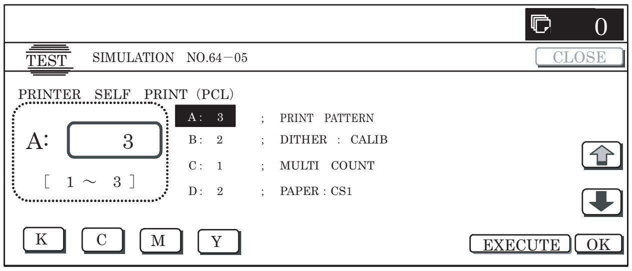
Item	Display item & Detail of display		Description of item		Set range		Default value
A	PRINT PATTERN		Print pattern specification (*For details, refer to below.)		1 to 3		3
B	DITHER	STRAIGHT	Dither correction specification	Straight	1 to 2	1	2
		CALIB		Calibration		2	
C	MULTI COUNT		Print quantity		1 to 999		1
D	PAPER	MFT	Paper feed tray select	Manual feed	1 to 6	1	2 (CS1)
		CS1		Cassette 1		2	
		CS2		Cassette 2		3	
		CS3		Cassette 3		4	
		CS4		Cassette 4		5	
		LCC		LCC		6	
E	HALFTONE	PHOTO	Half tone	Photo	0 to 2	0	0 (PHOTO)
		TEXT/GRAPHICS		Text/Picture		1	
		CAD		Design		2	
F	BIT DEPTH	1BIT	Bit number	1 bit	0 to 1	0	1 (4BIT)
		4BIT		4 bit		1	
G	INTENT	SHARP COLOR	Rendering indent	Sharp color	0 to 4	0	0 (SHARP COLOR)
		PERCEPTUAL		Perceptual		1	
		COLORIMETRIC		Color metric		2	
		SATURATION		Saturation		3	
		CAD		CAD		4	
H	GRAY COMPENSATION	K	Gray compensation	K only	0 to 1	0	0 (K)
		KCMY		KCMY		1	
I	TONER SAVE MODE	ON	Toner save mode	Setting	0 to 1	0	1 (OFF)
		OFF		No setting		1	

* When B/W print is made, the bit number is fixed to 1 bit and selection of half tone/rendering intent/gray compensation is disabled. (Though entry of a value can be made, it is not reflected to the setting.)
* Items B, D, E, F, G, H, and I are displayed as "Display item: Detail of display."
  Example: PAPER: CS1

<Detailed description for each print pattern in item A>

NO.	Content	Color select		Gradation select	Remark
		Condition	No	Dither select	
1	PCL process inspection pattern (COLOR)	×	×	1:Straight 2:Calibration	
2	PCL process inspection pattern (B/W)	×	K only	1:Straight 2:Calibration	Rounded to K only regardless of COLOR SELECT state. Print is made at the B/W mode process speed.

NO.	Content	Color select		Gradation select	Remark
		Condition	No	Dither select	
3	PCL process inspection pattern (COLOR/B/W continuous)	×	×	2:Calibration	Continuous printing is made at the default setting in the sequence of COLOR and B/W. B/W printing is made at the B/W mode process speed.



SIMULATION NO.64−05

PRINTER SELF PRINT (PCL)

A: 3

[1 ～ 3]

A: 3 ; PRINT PATTERN
B: 2 ; DITHER : CALIB
C: 1 ; MULTI COUNT
D: 2 ; PAPER : CS1

64-6

Purpose : Operation test/Check

Function (Purpose) : Used to execute the printer self print (PS).

Section : Printer

Item : Operation

Operation/Procedure

1) Select a color with [K] [C] [M] [Y] buttons.

   The selected button is highlighted. When the selected button is pressed again, it returns to the normal display. (Two or more buttons can be selected.)

2) Select the set item with [↑] and [↓] buttons.
   - * The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

3) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.

4) When [EXECUTE] button is pressed, the currently set self-print is started.

   [EXECUTE] button remains highlighted during self-printing.
   - * When [OK], [↑], [↓], [EXECUTE] button, [COLOR], or [BLACK] key is pressed, the value is set to the set item. (The value is not saved to EEPROM and RAM.)
   - * When [EXECUTE] button, [C], [CA], or [SYSTEM SETTINGS] key is pressed during printing, the operation is interrupted.
   - * When the machine returns to the ready state after occurrence of an interruption (paper empty, jam, etc.), self-printing is resumed.

* When paper which does not satisfy the paper feed conditions and the paper exit conditions, printing cannot be made.

<Set item description>

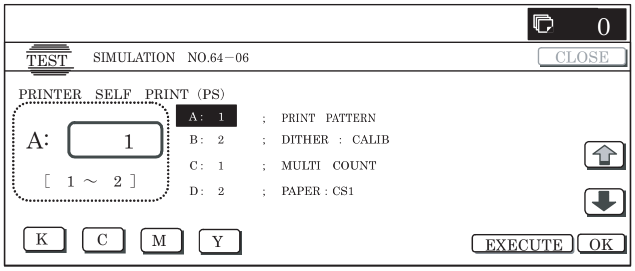
Item	Display item & Detail of display		Description of item		Set range		Default value
A	PRINT PATTERN		Print pattern specification (* For details, refer to below.)		1 to 2		1
B	DITHER	STRAIGHT	Dither correction specification	Straight	1 to 2	1	2
		CALIB		Calibration		2	
C	MULTI CONUT		Print quantity		1 to 999		1
D	PAPER	MFT	Paper feed tray select	Manual feed	1 to 6	1	2 (CS1)
		CS1		Cassette 1		2	
		CS2		Cassette 2		3	
		CS3		Cassette 3		4	
		CS4		Cassette 4		5	
		LCC		LCC		6	
E	HALFTONE	PHOTO	Half tone	Photo	0 to 2	0	0 (PHOTO)
		TEXT/GRAPHICS		Text/Graphic		1	
		CAD		Design		2	
F	BIT DEPTH	1BIT	Bit number	1 bit	0 to 1	0	1 (4BIT)
		4BIT		4 bit		1	
G	INTENT	SHARP COLOR	Rendering intent	Sharp color	0 to 4	0	0 (SHARP COLOR)
		PERCEPTUAL		Perceptual		1	
		COLORIMETRIC		Color metric		2	
		SATURATION		Saturation		3	
		CAD		CAD		4	
H	GRAY COMPENSATION	K	Gray compensation	K only	0 to 1	0	0 (K)
		KCMY		KCMY		1	
I	INK SIMULATION	OFF	Ink simulation	OFF	0 to 3	0	0 (OFF)
		SWOP		SWOP		1	
		EURO		EURO		2	
		JAPAN COLOR		JAPAN COLOR		3	

* When B/W print is made, the bit number is fixed to 1 bit and selection of half tone/rendering intent/gray compensation/ ink simulation is disabled. (Though entry of a value can be made, it is not reflected to the setting.)

* Items B, D, E, F, G, H, and I are displayed as "Display item: Detail of display."
Example: PAPER: CS1

<Detailed description for each print pattern in item A>

NO.	Content	Color select		Gradation select dither select	Remark
		Condition	When NO		
1	PS inspection pattern (COLOR)	×	×	1:Straight	
				2:Calibration	
2	PS inspection pattern (B/W)	×	K only	1:Straight	Rounded to K only regardless of COLOR SELECT status. Print is made at the B/B mode process speed.
				2:Calibration	



SIMULATION NO.64−06

PRINTER SELF PRINT (PS)

A: 1

[1 ～ 2]

A: 1 ; PRINT PATTERN
B: 2 ; DITHER : CALIB
C: 1 ; MULTI COUNT
D: 2 ; PAPER : CS1

65

65-1

Purpose : Adjustment

Function (Purpose) : Used to adjust the touch panel (LCD display section) detection position.

Section : Operation panel

Item : Adjustment

Operation/Procedure

1) Touch the four cross marks on the screen. The coordinates of the pressed points are set.
   - * The four cross marks may be touched in any sequence.
   - * A touched cross mark grays out.
   - * When all the four marks are touched and in the case of OK, the sampled correction value is saved and the display returns to the sub number entry screen.

     In the case of NG, the display returns to the initial screen.
   - * The correction value sampled by this simulation and the coordinates of sampled positions are used to obtain the coordinates from the correction values of the touched position.

65-2

Purpose : Adjustment/Setup/Operation data output/Check (Display/Print)

Function (Purpose) : Used to check the touch panel (LCD display section) detection position adjustment result.

Section : Operation panel

Item : Operation

Operation/Procedure

1) Enter the simulation.

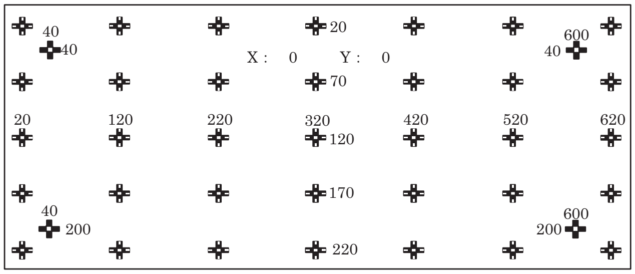
   When the touch panel is not touched at all, the coordinates of X and Y are "0."
2) Touch the touch panel.

   The coordinates of the currently touched position are displayed in real time.
   - * X-coordinates (horizontal direction) and Y-coordinates (vertical direction) are displayed in decimal numbers.
   - * When you take your finger off the touch panel, the last display value is displayed. (It does not return to "0.")

* As far as the touch panel is properly adjusted, the range of coordinates in the LCD display range is:

X-axis: "0" to "639"

Y-axis: "0" to "239"



67

67-24

Purpose : Adjustment

Function (Purpose) : Use to execute the printer setting of auto color calibration.

Section : Printer

Item : Setting

Operation/Procedure

1) When the machine enters Simulation 67-24, the following screen is displayed.
   - * When [EXECUTE] button is pressed, the high density process control is started and the 48-patch self-printing is started.

     Check to confirm that there is A3 paper in the paper feed tray. If paper is insufficient, supply it.
2) During the 48-patch self-printing, [EXECUTE] button is highlighted.
3) After completion of self-printing, the display is shifted to the output patch scan start standby screen.

Place the printed 48-patch pattern on the glass table, and press [FACTORY] or [SERVICE] button to select the process mode.

4) Press [EXECUTE] button. [EXECUTE] button is highlighted and the set 48-patch pattern is scanned.

   Check to insure that there is A3 paper in the paper feed tray. If paper is insufficient, supply it.

5) After completion of patch scan, the 16-patch self-printing is automatically started.

6) After completion of self-printing, the display is shifted to the registration process standby screen.

   When [REPEAT] button is pressed, the correction value is not saved and the display returns to the initial screen.

   When [OK] button is pressed, the correction value is saved to EEPROM and RAM and the half-tone process control reference value registration process is started.

7) The display is shifted to the reference value registration process 1 completion screen. The reference value registration process 2 (Black) is automatically started.

8) When the reference value registration process 2 (Black) is completed, the following message is displayed. (Each message is automatically shifted.)

   BLACK: 2ND STEP BLACK END

   CYAN: 2ND STEP CYAN END

   MAGENTA: 2ND STEP MAGENTA END

   YELLOW: 2ND STEP YELLOW END

   * When the process control is executed second time, "2nd" is displayed.

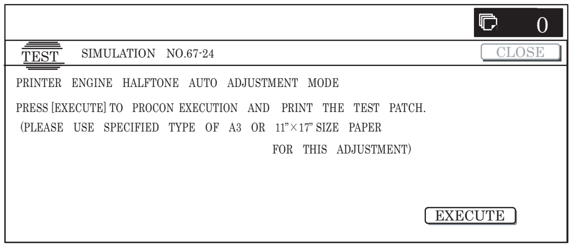
9) All the registration processes are completed.

* When [CA], [SYSTEM STTINGS], or [EXECUTE] button is pressed during self-printing, the operation is interrupted.

[Cancel of execution during operation]

- To cancel or resume, press [EXECUTE] button.

[Initial Screen]

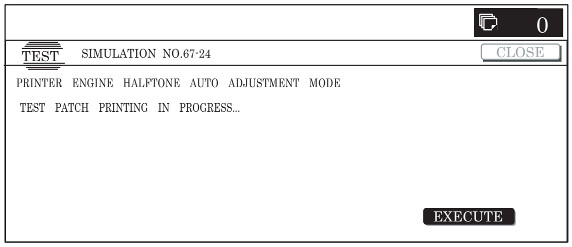


SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

PRESS [EXECUTE] TO PROCON EXECUTION AND PRINT THE TEST PATCH.
(PLEASE USE SPECIFIED TYPE OF A3 OR 11"×17" SIZE PAPER
FOR THIS ADJUSTMENT)

(During the 48-patch printing)

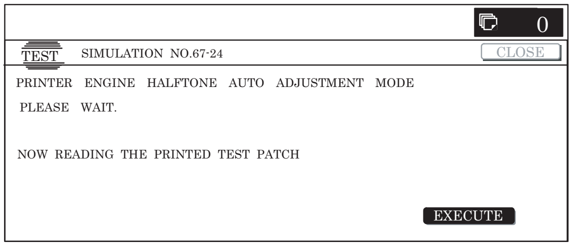


SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

TEST PATCH PRINTING IN PROGRESS...

(The output patch scan screen)



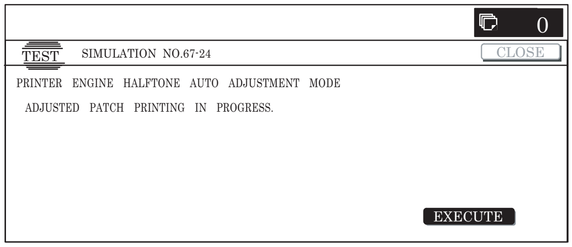
SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

PLEASE WAIT.

NOW READING THE PRINTED TEST PATCH

(During the 16-patch self-printing)

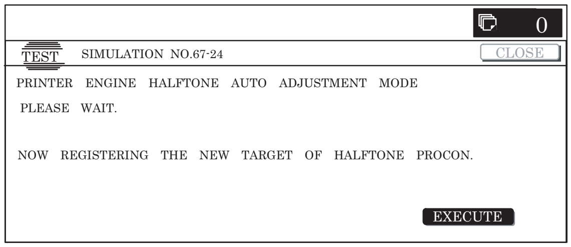


SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

ADJUSTED PATCH PRINTING IN PROGRESS.

(The half-tone process control reference value registration screen)



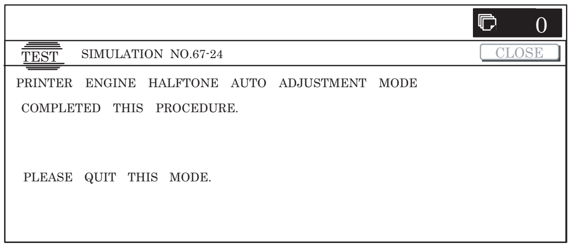
SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

PLEASE WAIT.

NOW REGISTERING THE NEW TARGET OF HALFTONE PROCON.

(All processes complete screen)



SIMULATION NO.67-24

PRINTER ENGINE HALFTONE AUTO ADJUSTMENT MODE

COMPLETED THIS PROCEDURE.

PLEASE QUIT THIS MODE.

67-25

Purpose : Adjustment

Function (Purpose) : Used to set the manual correction of the printer engine color balance.

Section : Printer

Item : Adjustment

Operation/Procedure

1) Use [K][C][M][Y] button to select a color. (The selected button is highlighted.)

   Select the set item with [↑] and [↓] buttons.

   The highlighted section of the set value is switched and displayed on the set setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

When [OK] button is pressed, the set value is saved to EEPROM and RAM.

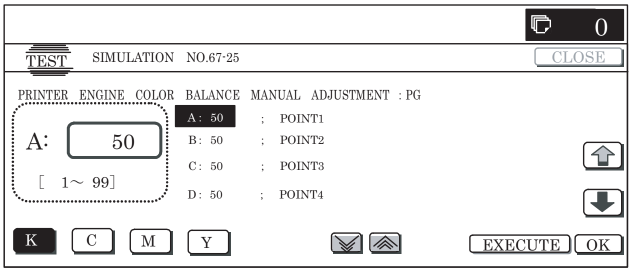
- * Press [C] key to clear the entered values.
- * Use [△] [▽] buttons to change the set values collectively. When the set value is not the upper limit (lower limit) value, each item value is increased (decreased) by one. If the set value is the upper limit (lower limit) value, it is not changed.

3) When [EXECUTE] button is pressed, it is highlighted and self-printing is started.

- * Also when [OK], [↑], [↓], [EXECUTE] button, [COLOR], or [BLACK] key is pressed, the value is saved to EEPROM and RAM.
- * When [EXECUTE] button is pressed and the self-printing is completed, [EXECUTE] button returns to the normal display.
- * When [C], [CA], [SYSTEM SETTINGS], or [EXECUTE] button is pressed, self-printing is interrupted.

<Set range and default value of each value>

Item	Item name	Set range	Default value
A	POINT1	1 to 99	50
B	POINT2	1 to 99	50
C	POINT3	1 to 99	50
D	POINT4	1 to 99	50
E	POINT5	1 to 99	50
F	POINT6	1 to 99	50
G	POINT7	1 to 99	50
H	POINT8	1 to 99	50
I	POINT9	1 to 99	50
J	POINT10	1 to 99	50
K	POINT11	1 to 99	50
L	POINT12	1 to 99	50
M	POINT13	1 to 99	50
N	POINT14	1 to 99	50
O	POINT15	1 to 99	50



PRINTER ENGINE COLOR BALANCE MANUAL ADJUSTMENT : PG

A: 50

[1～ 99]

A : 50 ; POINT1
B : 50 ; POINT2
C : 50 ; POINT3
D : 50 ; POINT4

67-26

Purpose : Adjustment

Function (Purpose) : Used to set the reference scanner target value of the printer engine auto density adjustment.

Section : Printer

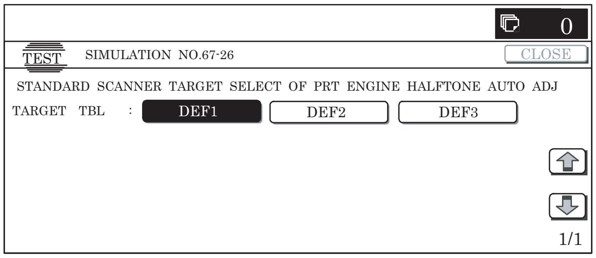
Item : Image quality

Operation/Procedure

1) When the machine enters Simulation 67-26, the current set button of the target value table is highlighted.
2) When the target value button to be changed is pressed, it is highlighted and the setting is saved to EEPROM and RAM.
   - * Only one item can be selected.

<Set range and default value of each setup>

Item content	Set value	Default value
Target value table setting	DEF1, DEF2, DEF3	DEF1



STANDARD SCANNER TARGET SELECT OF PRT ENGINE HALFTONE AUTO ADJ

TARGET TBL : DEF1 DEF2 DEF3

67-27

Purpose : Adjustment

Function (Purpose) : Used to display and register the scanner target value (for servicing) of the printer engine auto density adjustment.

Section : Printer

Item : Registration

Operation/Procedure

1) When the machine enters Simulation 67-27, the following screen is displayed.
   - * Use [K][C][M][Y] buttons to display the data of each color. Only one color button can be selected. The selected button is highlighted. (In the initial screen, [K](BLACK) is selected.)
2) Press [SETUP] button, and the display is shifted to the sampling start screen.

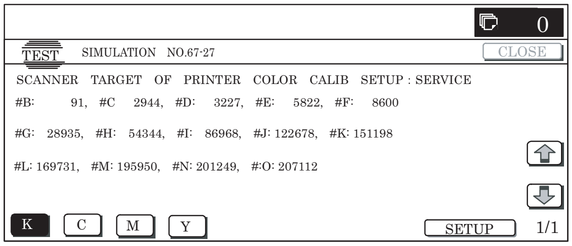
   Place the 16-patch pattern printed with SIM67-25 on the glass table and press [EXECUTE] button.

   [EXECUTE] button is highlighted and the display is shifted to the sampling screen.
3) After completion of sampling, the display is shifted to the sampling result display screen. Press [REPEAT] button to return to the sampling start screen.
4) When [OK] button is pressed, the displayed sampling result is saved to EEPROM and RAM.
5) The display returns to the initial screen, and the registered target value is displayed.

<Display data content>

Display data	Display content
B	Point B target value
C	Point C target value
D	Point D target value
E	Point E target value
F	Point F target value
G	Point G target value
H	Point H target value
I	Point I target value
J	Point J target value
K	Point K target value
L	Point L target value
M	Point M target value
N	Point N target value
O	Point O target value
BASE	Base sampling value

* BASE is displayed only on the sampling result display screen.



SCANNER TARGET OF PRINTER COLOR CALIB SETUP : SERVICE

#B: 91, #C 2944, #D: 3227, #E: 5822, #F: 8600

#G: 28935, #H: 54344, #I: 86968, #J: 122678, #K: 151198

#L: 169731, #M: 195950, #N: 201249, #:O: 207112

67-28

Purpose : Adjustment

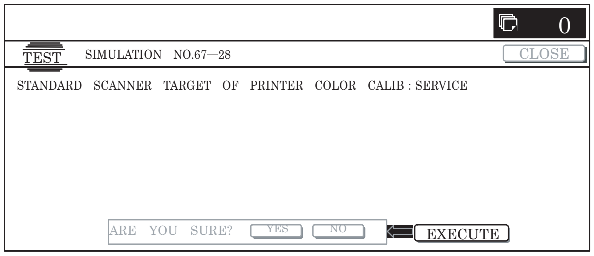
Function (Purpose) : The scanner target value (for servicing) of the printer engine auto density adjustment is reset to the standard value.

Section : Scanner

Item : Image quality

Operation/Procedure

1) Press [EXECUTE] button. [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.
2) If it is ready for execution, press [YES]. The standard value reset process is executed. [YES] button is highlighted.
   - * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   - * The restored data are saved to EEPROM and RAM.
   - * After completion of the reset process, [EXECUTE] button returns to the normal display and [YES] and [NO] buttons gray out.



SIMULATION NO.67—28

STANDARD SCANNER TARGET OF PRINTER COLOR CALIB : SERVICE

67-30

Purpose : Setting

Function (Purpose) : Used to set YES/NO of delivery of the main unit calibration data and the process control correction data to the client PC by the GDI printer.

Section : Printer

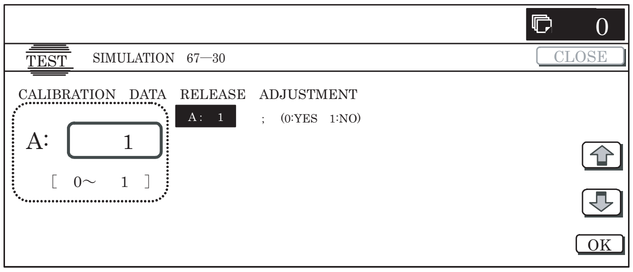
Item : Setting

Operation/Procedure

1) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
2) When [OK] button is pressed, the current entered value is saved to EEPROM and RAM.
   - * When [COLOR], or [BLACK] key is pressed, the value is saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Display	Content		Set range	Default value
A	(0:YES 1:NO)	0	Delivery of calibration data is inhibited.	0 to 1	1
		1	Delivery of calibration data is allowed.		



SIMULATION 67—30

CALIBRATION DATA RELEASE ADJUSTMENT

A: 1 ; (0:YES 1:NO)

A: 1

[0～ 1]

67-31

Purpose : Data clear

Function (Purpose) : Used to clear the printer calibration value.

Section : Printer

Item : Clear

Operation/Procedure

1) Press [EXECUTE] button.

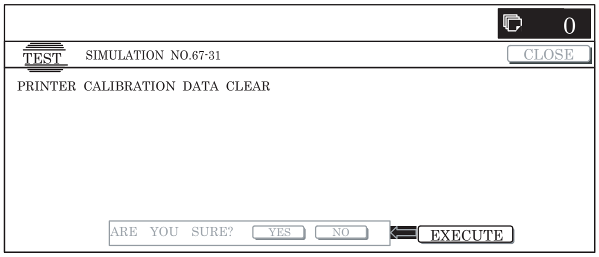
   [EXECUTE] button is highlighted and [YES] and [NO] buttons become active.
2) Press [YES] button.

   The printer calibration value is cleared.

   [YES] button is highlighted.
   - * The cleared data are saved to EEPROM and RAM.
   - * When [NO] button or [EXECUTE] button is pressed, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.
   - * After completion of calibration value clear, [EXECUTE] button returns to the normal display, and [YES] and [NO] buttons gray out.

<Clear item>

	Clear item
1	Printer calibration value



SIMULATION NO.67-31

PRINTER CALIBRATION DATA CLEAR

67-32

Purpose : Setting

Function (Purpose) : Used to set YES/NO of screen color change for each object.

Section :

Item : Setting

Operation/Procedure

1) Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.
   - * If there is any item over [↑], an active display is made and item is shifted.

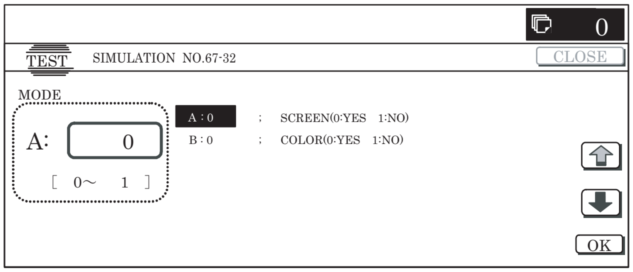
     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.
2) Enter the set value with 10-key.
   - * Press [C] key to clear the entered values.
3) When [OK], [↑], [↓] button, [COLOR], or [BLACK] key is pressed, the current entered value is saved to EEPROM and RAM.

<Set range and default value of each setup>

Item	Display	Content		Set range	Default value
A	SCREEN (0:YES 1:NO)	0	Change of screen for each object is allowed.	0 to 1	0 (YES)
		1	Change of screen for each object is inhibited.		
B	COLOR (0:YES 1:NO)	0	Change of color for each object is allowed.	0 to 1	0 (YES)
		1	Change of color for each object is inhibited.		



A : 0 ; SCREEN(0:YES 1:NO)
B : 0 ; COLOR(0:YES 1:NO)

67-33

Purpose : Adjustment

Function (Purpose) : Used to execute the gamma correction between printer screens. (for PCL)

Section : Printer

Item : Adjustment

Operation/Procedure

1) Use [K][C][M][Y] buttons to select a color. (The selected color button is highlighted.)

   Use [SCREEN] button to select a screen. (In this example, SCREEN2 is selected.)

   Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

     If there is no item over [↑], the display grays out and the operation is invalid.

     If there is any item under [↓], an active display is made and item is shifted.

     If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

   * Use [△] [▽] buttons to change the set values collectively.

     When the set value is not the upper limit (lower limit) value, the value is increased (decreased) by 1. If the set value is the upper limit (lower limit) value, it is not changed.

3) When [OK] button is pressed, the current set data are saved to EEPROM and RAM.

   * Also when [↑], [↑], [△], [▽] button, or [COLOR], [BLACK] key is pressed, the value is saved to EEPROM and RAM.

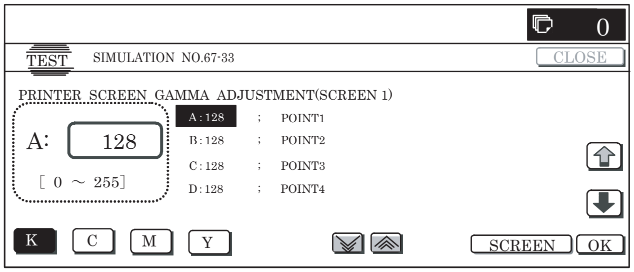
<Set range and default value of each setup>

Item	Display	Description	Set range	Default value					
				SCREEN1 – 9 (KCMY)	SCREEN10, 11 (K)	SCREEN4			
						K	C	M	Y
A	POINT1	Point 1	0 to 255	128	127	128	128	128	128
B	POINT2	Point 2	0 to 255	128	125	128	128	128	127
C	POINT3	Point 3	0 to 255	128	124	127	127	128	127
D	POINT4	Point 4	0 to 255	128	124	127	128	128	127
E	POINT5	Point 5	0 to 255	128	122	127	127	126	126
F	POINT6	Point 6	0 to 255	128	120	127	126	127	126
G	POINT7	Point 7	0 to 255	128	114	123	124	124	123
H	POINT8	Point 8	0 to 255	128	105	119	122	122	123
I	POINT9	Point 9	0 to 255	128	95	111	116	117	121
J	POINT10	Point 10	0 to 255	128	82	112	113	112	117
K	POINT11	Point 11	0 to 255	128	70	106	108	115	116
L	POINT12	Point 12	0 to 255	128	64	110	113	110	115
M	POINT13	Point 13	0 to 255	128	57	120	112	117	118
N	POINT14	Point 14	0 to 255	128	62	110	119	120	118
O	POINT15	Point 15	0 to 255	128	75	110	119	121	116

<Selectable items on the screen>

Display	Content
SCREEN1	4bit_LOW (Photo)
SCREEN2	4bit_HIGH (Graphic)
SCREEN3	1bit_LOW (Photo)
SCREEN4	1bit_HIGH (Graphic)
SCREEN5	4bit_CAD
SCREEN6	Mono (600 x 600) (*)
SCREEN7	Mono (1200 x 600) (*)
SCREEN8	Toner save 1bit_LOW (Photo)
SCREEN9	Toner save 1bit_HIGH (Graphic)
SCREEN10	Toner save Mono (600 x 600) (*)
SCREEN11	Toner save Mono (1200 x 600) (*)

(*): When SCREEN6/SCREEN7/SCREEN10/SCREEN11 is displayed, [K] data only. When [C] [M] [Y] button is pressed, the gray-out keys are disabled.



PRINTER SCREEN GAMMA ADJUSTMENT(SCREEN 1)

A : 128 ; POINT1
B : 128 ; POINT2
C : 128 ; POINT3
D : 128 ; POINT4

67-33

Purpose : Adjustment

Function (Purpose) : Used to execute the gamma correction between printer screens. (for GDI)

Section : Printer

Item : Adjustment

Operation/Procedure

1) Use [K][C][M][Y] buttons to select a color. (The selected color button is highlighted.)

   Use [SCREEN] button to select a screen. (In this example, SCREEN2 is selected.)

   Select the set item with [↑] and [↓] buttons.

   The highlighted set value is switched and the value is displayed in the setting area.

   * If there is any item over [↑], an active display is made and item is shifted.

   If there is no item over [↑], the display grays out and the operation is invalid.

   If there is any item under [↓], an active display is made and item is shifted.

   If there is no item over [↓], the display grays out and the operation is invalid.

2) Enter the set value with 10-key.

   * Press [C] key to clear the entered values.

   * Use [△] [▽] buttons to change the set values collectively.

   When the set value is not the upper limit (lower limit) value, the value is increased (decreased) by 1. If the set value is the upper limit (lower limit) value, it is not changed.

3) When [OK] button is pressed, the current set data are saved to EEPROM and RAM.

   * Also when [↑], [↑], [△], [▽] button, or [COLOR], [BLACK] key is pressed, the value is saved to EEPROM and RAM.

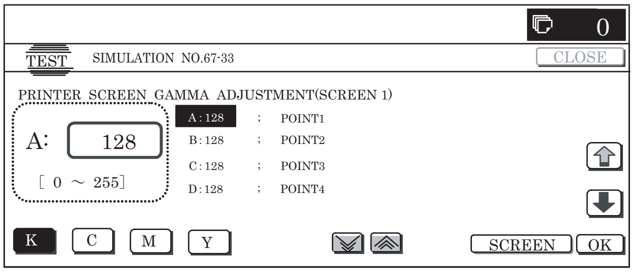
<Set range and default value of each setup>

Item	Display	Description	Set range	Default value				
				SCREEN1•3	SCREEN2			
					K	C	M	Y
A	POINT1	Point 1	0 to 255	128	128	128	128	128
B	POINT2	Point 2	0 to 255	128	128	128	128	127
C	POINT3	Point 3	0 to 255	128	127	127	128	127
D	POINT4	Point 4	0 to 255	128	127	128	128	127
E	POINT5	Point 5	0 to 255	128	127	127	126	126
F	POINT6	Point 6	0 to 255	128	127	126	127	126
G	POINT7	Point 7	0 to 255	128	123	124	124	123
H	POINT8	Point 8	0 to 255	128	119	122	122	123
I	POINT9	Point 9	0 to 255	128	111	116	117	121
J	POINT10	Point 10	0 to 255	128	112	113	112	117
K	POINT11	Point 11	0 to 255	128	106	108	115	116
L	POINT12	Point 12	0 to 255	128	110	113	110	115
M	POINT13	Point 13	0 to 255	128	120	112	117	118
N	POINT14	Point 14	0 to 255	128	110	119	120	118
O	POINT15	Point 15	0 to 255	128	110	119	121	116

<Selectable items on the screen>

Display	Content
SCREEN1	1bit Photo
SCREEN2	1bit Graphic
SCREEN3	1bit Mono (*)

(*): When SCREEN3 is displayed, [K] data only. When [C] [M] [Y] button is pressed, the gray-out keys are disabled.



PRINTER SCREEN GAMMA ADJUSTMENT(SCREEN 1)

A: 128

[0 ～ 255]

A : 128 ; POINT1
B : 128 ; POINT2
C : 128 ; POINT3
D : 128 ; POINT4

[8] SELF DIAG AND TROUBLE CODE

1. Self diag

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

A. Function and purpose

1) Securing safety. (The machine is stopped on detection of a trouble.)
2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

B. Self diag message kinds

The self diag messages are classified as shown in the table below.

Class 1	User	Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.)
	Serviceman	Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.)
	Other	—
Class 2	Warning	Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.)
	Trouble	Warning of a machine trouble. The machine is stopped.
	Other	—

C. Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

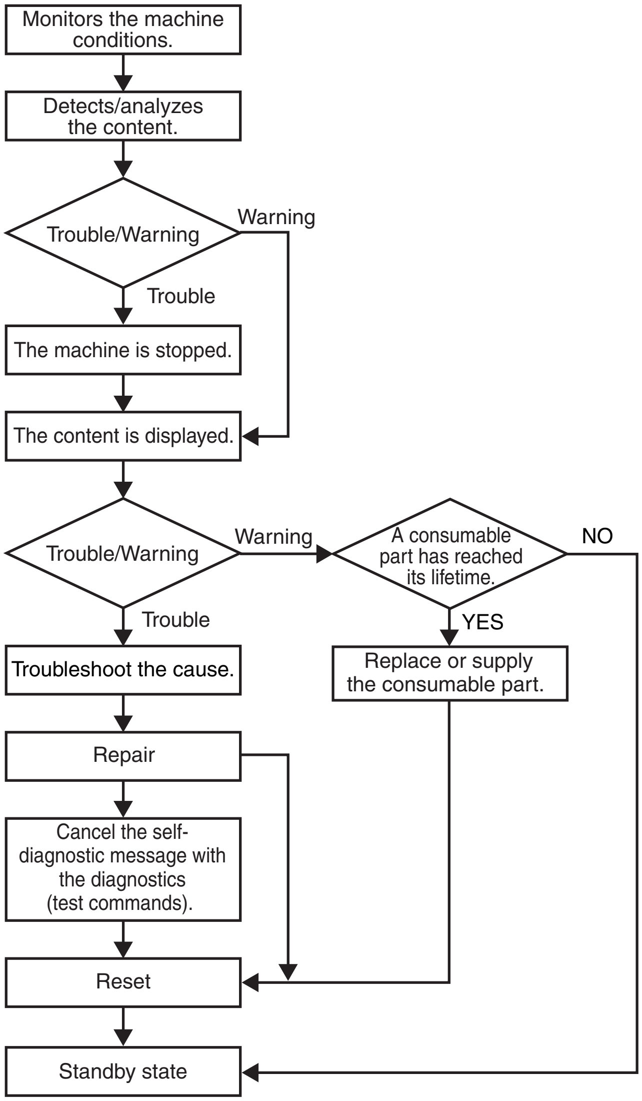
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.


Monitors the machine conditions.
Detects/analyzes the content.
Trouble/Warning
Warning
Trouble
The machine is stopped.
The content is displayed.
Trouble/Warning
Warning
A consumable part has reached its lifetime.
NO
Trouble
YES
Troubleshoot the cause.
Replace or supply the consumable part.
Repair
Cancel the self-diagnostic message with the diagnostics (test commands).
Reset
Standby state

D. Breakdown sequence

(1) Breakdown mode list

There are following cases of the breakdown mode.

Kind of trouble	Judgment block	Trouble code	Operatable mode								
			Copy scan (including interruption)	Scan push	Scan pull	Scan To HDD	FAX send	FAX print	Print	List print	Notification to FAST host
FAX board trouble (1 line)	ICU	F6	○	○	○	○	△ 1	△ 1	○	○	△ 1
FAX board trouble (2 lines)		F7	○	○	○	○	△ 1	△ 1	○	○	△ 1
HDD trouble		E7 (03)	×	×	×	×	×	×	×	×	○
SCU communication trouble		E7 (80), A0-02	×	×	×	×	×	○	○	○	○
PCU communication trouble		E7 (90), A0-01 L8-20	×	×	×	×	×	×	×	×	○
Backup battery voltage fall		U1 (01)	×	×	×	×	×	×	×	×	○
Controller fan motor trouble		L4-30	×	×	×	×	×	×	×	×	×
Connection trouble (ICU detection)		E7 (60 – 65), A0 (10 – 12, 20)	×	×	×	×	×	×	×	×	×
Serial number discrepancy		U2 (30)	×	×	×	×	×	×	×	×	×
Memory error (included not installed the expansion RAM)		U2 (00, 05, 10, 11, 22, 23, 24, 25)	×	×	×	×	×	×	×	×	○
HDD registration data sum error		U2 (50)	×	×	×	×	×	×	×	×	○
Image memory trouble, decode error		E7 (00, 01, 05, 06, 08, 09)	×	×	×	×	×	×	×	×	○
Network error		CE	○	○ Operatable but send NG	○ Operatable but send NG	○	○	○	○	○	×
Process control trouble (Only history is left.) (ICU detection)		F2 (80 – 87)	○	○	○	○	○	○	○	○	○
Laser trouble	PCU	E7 (20, 28, 29), L6 (10)	×	×	×	×	×	×	×	× * 7	○
Connection trouble (PCU detection)		E7 (50, 55), A0 (21)	×	×	×	×	×	×	×	×	×
PCU section troubles (motor, fusing, etc.)		H2, H3, H4, H5, L4 (excluding L4-30), U2 (90, 91), F2 (40, 64, 70, 74), L8 (01, 02)	×	×	×	×	×	×	×	× * 7	○
PCU color system troubles		E7 (21), F2 (41 – 43, 65 – 67, 71 – 73, 75 – 77)	× * 6	× * 6	× * 6	× * 6	× * 6	× * 6	× * 6	× * 6 * 7	○
Paper feed tray 1 trouble		F3-12	△ 2	○	○	○	○	△ 2	△ 2	△ 2 * 7	○
Paper feed tray 2 trouble		F3-22	△ 2	○	○	○	○	△ 2	△ 2	△ 2 * 7	○
Paper feed tray 3 trouble		U6-01	△ 2	○	○	○	○	△ 2	△ 2	△ 2 * 7	○
Paper feed tray 4 trouble		U6-02	△ 2	○	○	○	○	△ 2	△ 2	△ 2 * 7	○
Paper feed tray 5 trouble		U6 (09, 20 – 22, 51)	△ 2	○	○	○	○	△ 2	△ 2	△ 2 * 7	○
Paper feed tray other troubles		U6 (00, 10, 50)	△ 8	○	○	○	○	△ 8	△ 8	△ 8 * 7	○
Staple trouble		F1 (10)	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3 * 7	○
After-process trouble		F1 (excluding 10)	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3	△ 3 * 7	○
Other troubles	PCU	EE (EL, EU, EC)	○	○	○	○	○	○	○	○	○
Process control trouble (PCU detection)		F2 (39, 44, 45, 49, 51, 58, 78)	○ * 9	○	○	○	○	○	○	○	○

Kind of trouble	Judgment block	Trouble code	Operatable mode								
			Copy scan (including interruption)	Scan push	Scan pull	Scan To HDD	FAX send	FAX print	Print	List print	Notification to FAST host
Connection trouble (SCU detection)	SCU	E7 (70, 75), A0 (22)	×	×	×	×	×	×	×	×	×
SCU color system troubles		UC (02)	×	×	×	×	×	○	○	○	○
Document control trouble		UC (20)	×	×	×	×	×	○	○	○	○
EEPROM system		U2 (80, 81)	×	×	×	×	×	○	○	○	○
Scanner section troubles (mirror motor, lens, copy lamp)		L1, L3	×	×	×	×	×	○	○	○	○
CCD troubles (shading, etc.)		E7 (10, 11, 14)	×	×	×	×	×	○	○	○	○
Process control trouble (Only history is left.) (ICU detection)	MFP	F2 (80 – 87, 90)	○	○	○	○	○	○	○	○	○
Process control trouble (Only history is left.) (PCU detection)	PCU	F2 (91 – 94)	○	○	○	○	○	○	○	○	○

○: Operation enabled, ×: Operation disabled

△ 1: The operation is enabled in a line other than the trouble line.

△ 2: When detected during other than a job, the operation is enabled with a tray other than the trouble tray.

△ 3: When detected during other than a job, the operation is enabled in a section other than the trouble paper exit section. * When, however, the right tray is set.

△ 4: When detected during other than a job, the operation is enabled in the OC mode.

* 5: Cannot be shifted to the nighttime mode/power saving function. The power cannot be turned OFF with the power SW on the operation panel.

* 6: When the color mode is set to Disable in the "Color mode disable setting" of the system setting, the operation is enabled in the Black mode.

* 7: Since communication is enabled, reception can be transferred.

△ 8: When detected during other than a job, the operation is enabled in other than the DESK.

* 9: Trouble display message is displayed in 2 lines. (Example: Ready to copy. F2 trouble)

* Trouble mode process

- Machine operation enabled under some conditions.

  The operations excluding the trouble mode are enabled (READY). For the mode where operations are disabled, only setting is enabled and the operation disable message is made.

  (NOT READY)

  (Display) A dialog is displayed when a trouble occurs. For the mode where operations are enabled, [OK] button is added to the message. When operations are disabled, [OK] button is not displayed, and the message is displayed until the trouble is cancelled.

  * For △ 2, 3, 4, 8, perform the following procedures. (In order to avoid patent interference.)
  - When a trouble is detected during a job, the machine operation is terminated. (Trouble display/without [OK] key)
  - When a trouble is detected during other than a JOB, the trouble display is not made and the trouble position cannot be selected. (The display is not turned off. Machine/Button)

- Troubles which disable the machine operations

  The trouble display is always made, and all the modes cannot be set.

- Writing to the trouble memory

  Writing of a same trouble to the trouble memory can be selected with SIM 26-35. When this simulation is set, any trouble is written to the trouble memory unconditionally.

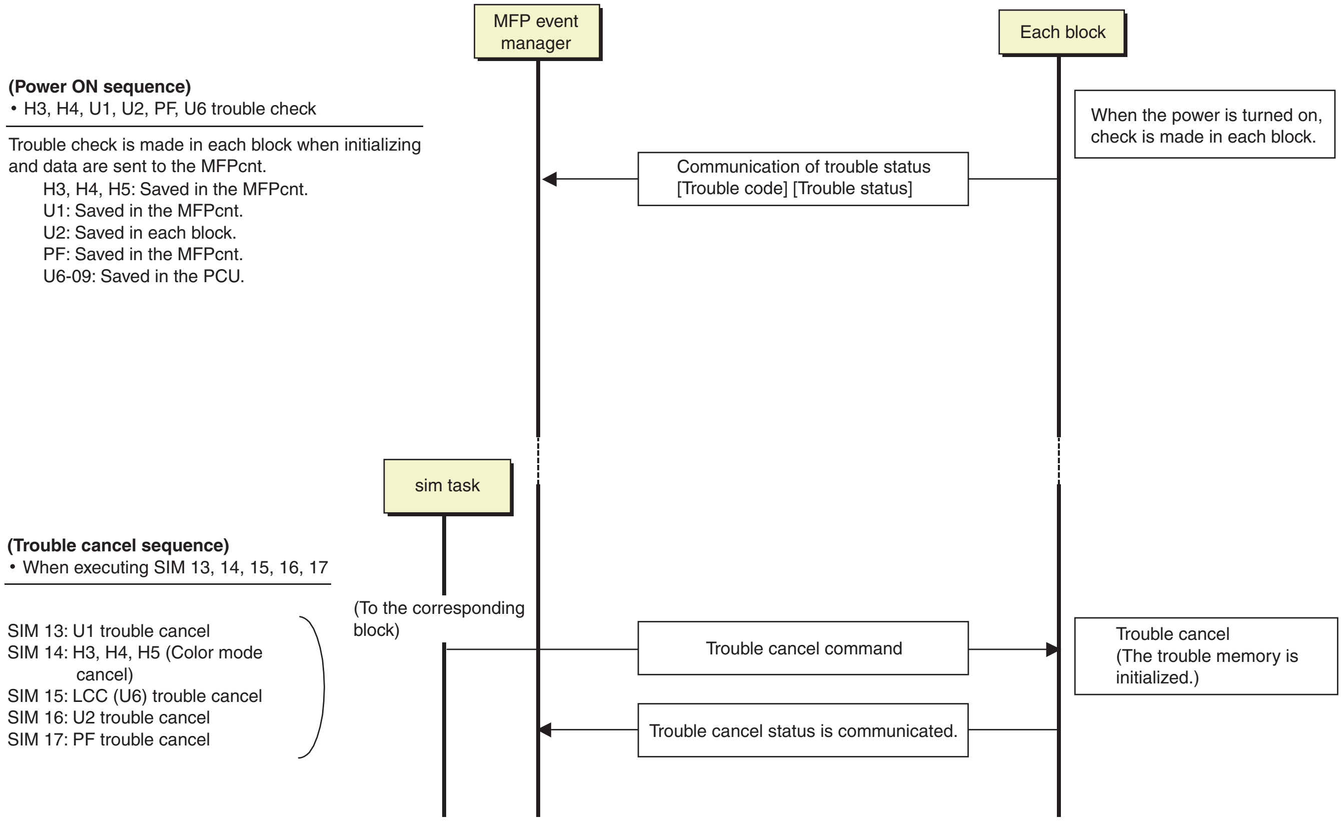
  (Sim.26-35)

  0: Only once. If same as the previous one, it is not saved. (Default)

  1: Any time. Though same as the previous one, it is saved.

(2) Power ON trouble detection sequence.

- When the power is turned ON and each trouble of H3, H4, H5, U1, U2, PF, U6 (09) is stored, it is judged as a trouble immediately.


MFP event manager
Each block
sim task
When the power is turned on, check is made in each block.
Communication of trouble status [Trouble code] [Trouble status]
(To the corresponding block)
Trouble cancel command
Trouble cancel (The trouble memory is initialized.)
Trouble cancel status is communicated.

(Power ON sequence)
- H3, H4, U1, U2, PF, U6 trouble check

Trouble check is made in each block when initializing and data are sent to the MFPcnt.
H3, H4, H5: Saved in the MFPcnt.
U1: Saved in the MFPcnt.
U2: Saved in each block.
PF: Saved in the MFPcnt.
U6-09: Saved in the PCU.

(Trouble cancel sequence)
- When executing SIM 13, 14, 15, 16, 17

SIM 13: U1 trouble cancel
SIM 14: H3, H4, H5 (Color mode cancel)
SIM 15: LCC (U6) trouble cancel
SIM 16: U2 trouble cancel
SIM 17: PF trouble cancel

2. Trouble code list

Trouble code		Trouble code content	Remarks	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code								
A0	01	PCU ROM abnormality		PCU			●		
	02	SCU ROM abnormality		Scanner			●		
	10	Controller ROM error		MFP			●		
	11	IF version discrepancy (CTL-PCU)		MFP			●		
	12	IF version discrepancy (CTL-SCU)		MFP			●		
	20	Machine level error (CTL detection)		MFP			●		
	21	Machine level error (PCU detection)		PCU			●		
	22	Machine level error (SCU detection)		Scanner			●		
CE	00	Communication error other than CE-01 – 08		MFP			●		
	01	Network controller trouble		MFP			●		
	02	Not-specified mail/FTP server error		MFP			●		
	03	Communication error in image send		MFP			●		
	04	FTP server account name or authentication password input error		MFP			●		
	05	FTP server directory input error		MFP			●		
	06	POP3 server access error		MFP			●		
	07	POP3 server authentication check error		MFP			●		
	08	POP3 server timeout error		MFP			●		
E7	00	System memory access error		MFP			●		
	01	System data trouble		MFP			●		
	03	HDD trouble		MFP			●		
	05	Local memory access error		MFP			●		
	06	Decode error trouble: Compression decode error (A compression file cannot decompressed.)		MFP			●		
	08	Local memory specifications error		MFP			●		
	09	Local memory combination error		MFP			●		
	10	Shading trouble (Black correction)		Scanner			●		
	11	Shading trouble (White correction)		Scanner			●		
	14	SCAN-ASIC trouble		Scanner			●		
	20	LSU BD detection trouble		PCU			●		
	21	LSU LD deterioration trouble		PCU			●		

Trouble code		Trouble code content	Remarks	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code								
E7	28	LSU control ASIC connection abnormality		PCU			●		
	29	LSU-ASIC frequency abnormality		PCU			●		
	50	Engine connection trouble		PCU			●		
	55	PWB information sum error (Engine detection)		PCU			●		
	60	Controller connection trouble (Engine detection)		MFP			●		
	61	Controller connection trouble (Engine)		MFP			●		
	62	Controller connection trouble (Scanner)		MFP			●		
	65	PWB information sum error (Controller detection)		MFP			●		
	70	Scanner connection trouble		SCU			●		
	75	PWB information sum error (Scanner detection)		SCU			●		
	80	Communication trouble between the controller and the scanner		MFP			●		
	90	Communication trouble between the controller and the engine		MFP			●		
EE	EC	Auto developer adjustment trouble (The sample level for every rotation is other than 128 ± 10.)		PCU			●		
	EL	Auto developer adjustment trouble (overtoner error)		PCU			●		
	EU	Auto development adjustment trouble (Under-toner abnormality)		PCU			●		
F1	00	Finisher communication trouble (Machine side detection)		PCU			●		
	02	Saddle finisher transport motor trouble		PCU		●			
	03	Finisher paddle motor trouble (MX-FNX2), finisher swing motor trouble (MX-FNX1)		PCU		●			
	08	Finisher stapler shift motor trouble		PCU		●			
	10	Finisher staple motor abnormality		PCU		●			
	11	Finisher bundle process motor abnormality		PCU		●			
	15	Finisher tray lift motor abnormality		PCU		●			
	19	Finisher pre-alignment motor abnormality		PCU		●			
	20	Finisher after-alignment motor abnormality		PCU		●			
	21	Finisher fan motor abnormality (MX-FNX1), Finisher interface fan motor abnormality (MX-FNX2)		PCU		●			
	31	Finisher folding sensor trouble (MX-FNX2)		PCU		●			
	32	Communication trouble between the finisher and the punch unit (MX-FN2)		PCU		●			
	33	Finisher punch shift motor trouble		PCU		●			
	34	Finisher punch motor trouble		PCU		●			
	35	Finisher punch side registration sensor trouble (MX-FNX2)		PCU		●			
	36	Finisher punch registration sensor trouble (MX-FNX2)		PCU		●			
	37	Finisher backup RAM trouble		PCU		●			
	38	Finisher punch backup RAM trouble (MX-FNX2)		PCU		●			
	39	Finisher punch dust sensor trouble (MX-FNX2)		PCU		●			
	40	Saddle finisher punch power interruption trouble (MX-FNX2)		PCU		●			
	50	Finisher incompatibility trouble		PCU		●			
F2	39	Process thermistor trouble		PCU					●
	40	Toner empty sensor abnormality (BLACK)		PCU					●
	41	Toner empty sensor abnormality (CYAN)		PCU					●
	42	Toner empty sensor abnormality (MAGENTA)		PCU					●
	43	Toner empty sensor abnormality (YELLOW)		PCU					●
	44	Black exclusive image density sensor trouble (Transfer belt surface reflection ratio abnormality)		PCU					●
	45	Color exclusive image density sensor trouble (Calibration plate surface reflection ratio abnormality)		PCU					●
	49	LSU thermistor trouble		PCU					●
	50	K phase sensor sensing trouble		PCU					●
	51	CL phase sensor sensing trouble		PCU					●
	58	Process humidity sensor trouble		PCU					●
	64	Toner supply abnormality error (BLACK)		PCU					●
	65	Toner supply abnormality error (CYAN)		PCU					●
	66	Toner supply abnormality error (MAGENTA)		PCU					●
	67	Toner supply abnormality error (YELLOW)		PCU					●
	70	Toner cartridge improper cartridge detection (BLACK)		PCU					●
	71	Toner cartridge improper cartridge detection (CYAN)		PCU					●
	72	Toner cartridge improper cartridge detection (MAGENTA)		PCU					●
	73	Toner cartridge improper cartridge detection (YELLOW)		PCU					●
	74	Toner cartridge CRUM error (BLACK)		PCU					●

Trouble code		Trouble code content	Remarks	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code								
F2	75	Toner cartridge CRUM error (CYAN)		PCU					●
	76	Toner cartridge CRUM error (MAGENTA)		PCU					●
	77	Toner cartridge CRUM error (YELLOW)		PCU					●
	78	Registration exclusive image density sensor trouble (Transfer belt surface reflection ratio abnormality)		PCU					●
	80	Half tone process control 1st patch reference value trouble (BLACK)		PCU					●
	81	Half tone process control 1st patch reference value trouble (CYAN)		PCU					●
	82	Half tone process control 1st patch reference value trouble (MAGENTA)		PCU					●
	83	Half tone process control 1st patch reference value trouble (YELLOW)		PCU					●
	84	Half tone process control 2nd patch reference value trouble (BLACK)		PCU					●
	85	Half tone process control 2nd patch reference value trouble (CYAN)		PCU					●
	86	Half tone process control 2nd patch reference value trouble (MAGENTA)		PCU					●
	87	Half tone process control 2nd patch reference value trouble (YELLOW)		PCU					●
	92	High-density process control density correction error (CYAN)		PCU					●
	93	High-density process control density correction error (MAGENTA)		PCU					●
	94	High-density process control density correction error (YELLOW)		PCU					●
F3	12	Main unit tray 1 lift-up trouble		PCU	●				
	22	Main unit tray 2 lift-up trouble		PCU	●				
F6	00	Communication trouble between the ICU and the FAX	Refer to FAX manual for details						
	01	FAX board EEPROM read/write error							
	04	FAX MODEM operation trouble							
	21	Combination error between the TEL/LIU PWB and the FAX soft switch							
	30	Access error to power controller on the FAX board (FAX detection)							
	97	FAX PWB incompatibility trouble							
	98	Combination error between the FAX-BOX PWB destination information and the machine destination information.							
F7	00	Communication trouble between the ICU and the FAX (Second line)							
	01	FAX board EEPROM read/write error (Second line)							
	04	FAX MODEM operation trouble (Second line)							
	21	Combination error between the TEL/LIU PWB and the FAX soft switch (Second line)							
	30	Access error to power controller on the FAX board (Second line)							
	97	FAX PWB incompatibility trouble (Second line)							
	98	Combination error between the FAX-BOX PWB destination information and the machine destination information (Second line)							
H2	00	Non-contact thermistor detection thermistor open (TH_UM_AD2)		PCU	●				
	01	Lower thermistor open (TH_LM)		PCU	●				
	02	Sub thermistor open (TH_US)		PCU	●				
	03	Non-contact thermistor compensation thermistor open (TH_UM_AD1)		PCU	●				
H3	00	Fusing section high temperature trouble (TH_UM)		PCU	●				
	01	Fusing section high temperature trouble (TH_LM)		PCU	●				
	02	Sub thermistor fusing section high temperature trouble (TH_US)		PCU	●				
H4	00	Fusing section low temperature trouble (TH_UM_AD2)		PCU	●				
	01	Fusing section low temperature trouble (TH_LM)		PCU	●				
	02	Sub thermistor fusing section low temperature trouble (TH_US)		PCU	●				
	30	Thermistor differential input trouble (TH_UM)		PCU	●				
H5	01	5 continuous detection of POD1 not-reached jam		PCU	●				
L1	00	Mirror feed trouble		Scanner	●				
L3	00	Mirror return trouble		Scanner	●				

Trouble code		Trouble code content	Remarks	Trouble detection	Mechanism	Option	Electricity	FAX	Supply
Main code	Sub code								
L4	02	Paper feed motor lock trouble		PCU			●		
	04	Developing motor trouble (BLACK)		PCU			●		
	05	Developing motor trouble (COLOR)		PCU			●		
	06	Transfer belt separation position sensor trouble		PCU			●		
	11	Shift motor trouble		PCU			●		
	30	Controller fan/HDD fan motor trouble		MFP			●		
	31	Paper exit cooling fan trouble		PCU			●		
	32	Power cooling fan/ozone exhaust fan trouble		PCU			●		
L6	10	Polygon motor lock detection		LSUcnt			●		
L8	01	No full wave signal		PCU			●		
	02	Full wave signal width abnormality		PCU			●		
	20	Power controller communication trouble		MFP			●		
PC	--	Personal counter not installed		MFP	●				
U1	01	Battery trouble		MFP			●		
U2	00	EEPROM read/write error (MFP detection)		MFP			●		
	05	HDD/Flash/EEPROM data discrepancy		MFP			●		
	10	SRAM user authentication index check sum error		MFP			●		
	11	EEPROM check sum error (MFP detection)		MFP			●		
	22	SRAM memory check sum error		MFP			●		
	23	MFPC section SRAM memory individual data check sum error		MFP			●		
	24	SRAM memory user authentication counter check sum error		MFP			●		
	25	Flash memory user authentication counter check sum error		MFP			●		
	30	Serial number data discrepancy (MFP ↔ PCU)		MFP			●		
	50	HDD section individual data check sum error		MFP			●		
	80	EEPROM read/write error (SCU detection)		Scanner			●		
	81	Adjustment value check sum error (SCU detection)		Scanner			●		
	90	EEPROM read/write error (PCU detection)		PCU			●		
	91	EEPROM (PCU) check sum error		PCU			●		
U6	00	Desk communication trouble		PCU			●		
	01	Tray 1 lift-up trouble		PCU	●				
	02	Tray 2 lift-up trouble		PCU	●				
	09	LCC lift motor trouble		PCU		●			
	10	Desk transport motor trouble		PCU	●				
	20	LCC communication trouble		PCU		●			
	21	LCC transport motor trouble		PCU		●			
	22	LCC 24V power abnormality		PCU		●			
	50	Desk incompatibility trouble		PCU	●				
	51	LCC incompatibility trouble		PCU		●			
UC	02	CPT-ASIC abnormality		Scanner			●		
	20	Document control module trouble		Scanner			●		

3. Details of trouble code

A0-01 PCU ROM abnormality

Trouble content		PCU ROM content trouble
Section		PCU
Case 1	Cause	Firmware upgrade is not made properly due to power OFF, etc.
	Check and remedy	Use SIM49-1 to upgrade the firmware.

A0-02 SCU ROM abnormality

Trouble content		SCU ROM content trouble
Section		Scanner
Case 1	Cause	Some part of SFU is not upgraded during upgrading of the firmware.
	Check and remedy	Use SIM49-1 to execute the firmware.

A0-10 Controller ROM error

Trouble content		SFU combination error in the controller
Section		MFP
Case 1	Cause	SFU upgrade was not properly made when upgrading the firmware.
	Check and remedy	Controller firmware upgrade

A0-11 IF version discrepancy (CTL-PCU)

Trouble content		Combination error between CTL and PCU
Section		MFP
Case 1	Cause	Combination error between CTL and PCU
	Check and remedy	Check the firmware combination between CTL and PCU.

A0-12 IF version discrepancy (CTL-SCU)

Trouble content		Combination error between CTL and SCU
Section		MFP
Case 1	Cause	Combination error between CTL and SCU
	Check and remedy	Check the firmware combination between CTL and SCU.

A0-20 Machine level error (CTL detection)

Trouble content		Combination error between the machine production/ remodeling and the firmware
Section		MFP
Case 1	Cause	Combination error between the machine production/ remodeling and the firmware
	Check and remedy	Check the combination between the machine production/remodeling and the firmware.

A0-21 Machine level error (PCU detection)

Trouble content		Combination error between the machine production/ remodeling and the firmware
Section		PCU
Case 1	Cause	Combination error between the machine production/ remodeling and the firmware
	Check and remedy	Check the combination between the machine production/remodeling and the firmware.

A0-22 Machine level error (SCU detection)

Trouble content		Combination error between the machine production/ remodeling and the firmware
Section		Scanner
Case 1	Cause	Combination error between the machine production/ remodeling and the firmware
	Check and remedy	Check the combination between the machine production/remodeling and the firmware.

CE-00 Communication error other than CE-01 – 08

Trouble content		Another communication error occurs.
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.

CE-01 Network controller trouble

Trouble content		Network controller and its peripheral circuit trouble
Section		MFP
Case 1	Cause	Network controller and its peripheral circuit trouble
	Check and remedy	1) Check the network controller and its peripheral circuit. 2) Output the NIC Config Page and check the NIC version. 3) Replace the MFPcnt PWB.

CE-02 Not-specified mail/FTP server error

Trouble content		The specified mail server, FTP server, and SMB server are not found
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.
Case 2	Cause	Network setup trouble
	Check and remedy	1) Check that the connected network supports TCP/ IP protocol. 2) Check from Web page that the Primary/ Secondary E-mail Server Address or the FTP server/Desktop PC/SMB server address as the destination is properly set. 3) When the above address is described with the Hostname, check that the DNS server is properly set or not.
Case 3	Cause	SMTP server/FTP server/NST/SMB server trouble
	Check and remedy	Check the SMTP server/FTP server/NST/SMB server for any trouble.

CE-03 Communication error in image send

Trouble content		The specified server does not respond during image send.
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.
Case 2	Cause	SMTP server/FTP server/NST/SMB server trouble
	Check and remedy	Check the SMTP server/FTP server/NST/SMB server for any trouble.

CE-04 FTP server account name or authentication password input error

Trouble content		The entered FTP server account name or the authentication password is invalid. The entered SMB server log-in name or the password is invalid.
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.
Case 2	Cause	The FTP server account name registered as the destination or the password for the account is incorrect.
	Check and remedy	Check to insure that the FTP server account name registered as the destination or the password for the account is correct.
Case 3	Cause	The SMB server account name registered as the destination or the password for the account is incorrect.
	Check and remedy	Check to insure that the SMB server account name registered as the destination or the password for the account is correct.

CE-05 FTP server directory input error

Trouble content		The entered FTP server directory is invalid. The entered SMB server folder is invalid.
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.
Case 2	Cause	The FTP server account name registered as the destination or the password for the account is incorrect.
	Check and remedy	Check to insure that there exits the FTP server directory registered as the destination.
Case 3	Cause	The SMB server account name registered as the destination or the password for it is incorrect.
	Check and remedy	Check to insure that there exists the SMB server folder registered as the destination.

CE-06 POP3 server access error

Trouble content		The specified mail server (POP3) is not found. (POP3 server access error)
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.
Case 2	Cause	Network setup error
	Check and remedy	1) Check that the connected network supports TCP/IP protocol. 2) Check the Web page to insure that the POP3 server address is correctly set. 3) If the above address is described in Hostname, check to insure that the DNS server is correctly set.
Case 3	Cause	PO3 server trouble
	Check and remedy	Check the POP3 server for any trouble.

CE-07 POP3 server authentication check error

Trouble content		The entered POP3 server account name or the authentication password is invalid. (POP3 server authentication check error)
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.
Case 2	Cause	The POP3 server account name or the password registered for the account is incorrect.
	Check and remedy	Check to insure that the POP3 server account name or the password for the account is correct.

CE-08 POP3 server timeout error

Trouble content		The specified mail server (POP3) does not respond. (POP3 server timeout error)
Section		MFP
Case 1	Cause	Network cable connection trouble
	Check and remedy	Check to insure that the network cable is securely connected.
Case 2	Cause	POP3 server trouble
	Check and remedy	Check the POP3 server for any trouble.

E7-00 System memory access error

Trouble content		System memory trouble (Tandem memory cannot be guaranteed.) Access to system memory cannot be made.
Section		MFP
Case 1	Cause	Expansion memory instillation error
	Check and remedy	Check installation of the system expansion memory.
Case 2	Cause	Garbled data
	Check and remedy	1) Use SIM60-01 to check memory read/write 2) Replace the expansion memory (if installed.) 3) Replace the MFPcnt PWB.
Case 3	Cause	Dirt on the memory pin
	Check and remedy	Clean the memory pin with alcohol.

* When E7-00 is in the following combination where system memory Slot 2 (inside) and Slot 1 (outside) operate normally but a hard error occurs. (Combination of system memory (slot 1, slot 2)

No.	System memory		Operation guarantee		When turning on the power
	Slot2 (Inside)	Slot1 (Outside)	Hard	Soft	
1	–	–	×	×	Since the machine is not booted, the trouble display is not made.
2	256MB	–	○	○	Normal operation
3	512MB	–	○	○	Normal operation
4	256MB	256MB	○	○	Normal operation
5	512MB	256MB	○	○	Normal operation
6	256MB	512MB	○	○	Normal operation
7	512MB	512MB	○	○	Normal operation
8	–	256MB	○	○	Normal operation
9	–	512MB	○	○	Normal operation

E7-01 System data trouble

Trouble content		ICU data trouble occurs.
Section		MFP
Case 1	Cause	ICU image transfer trouble
	Check and remedy	1) Check the connection state of the MFPcnt PWB connector. 2) Replace the MFPcnt PWB.

E7-03 HDD trouble

Trouble content		HDD connection trouble File control area data trouble (when FAT is broken)
Section		MFP
Case 1	Cause	The HDD is not properly installed to the MFPcnt PWB
	Check and remedy	1) Check installation of the HDD of the MFPcnt PWB. 2) Check connection of the harness of the MFPcnt PWB. 3) Use SIM62-2 and -3 to check read/write from/to the HDD.
Case 2	Cause	The HDD does not work properly.
	Check and remedy	Replace the HDD.
Case 3	Cause	MFPcnt PWB trouble
	Check and remedy	Replace the MFPcnt PWB.

E7-05 Local memory access error

Trouble content		Local memory cannot be accessed.
Section		MFP
Case 1	Cause	Local memory installation abnormality
	Check and remedy	Check the installing state of the local memory.
Case 2	Cause	Dirt on local memory pin
	Check and remedy	Clean the local memory pin with alcohol.
Case 3	Cause	Garbled data
	Check and remedy	1) Use SIM60-01 to check memory read/write. 2) Replace the memory. 3) Replace the MFPcnt PWB.

* Combination where local memory Slot 4 (inside) and Slot 3 (outside) operate normally (Refer to E7-09) but a hard error occurs.

E7-06 Decode error trouble: Compression decode error (A compression file cannot decompressed.)

Trouble content		A decode error occurs when forming an image.
Section		MFP
Case 1	Cause	Compression data abnormality
	Check and remedy	1) Check the installing state of the PWB. (PCI bus) 2) When an error occurs during a FAX job, check the installation of the FAX PWB. In the other cases, check the installation of the MFPcnt PWB and HDD. 3) Replace the MFPcnt PWB.
Case 2	Cause	HDD connection abnormality
	Check and remedy	Check the HDD connection.
Case 3	Cause	Data are garbled in image compression/send.
	Check and remedy	1) Check the installation of the PWB. (PCI bus) 2) When an error occurs during a FAX job, check the installation of the FAX PWB. In the other cases, check the installation of the MFPcnt PWB and HDD. 3) Replace the MFPcnt PWB.
Case 4	Cause	MFPcnt PWB abnormality
	Check and remedy	Replace the MFPcnt PWB.
Case 5	Cause	Local memory access trouble
	Check and remedy	Check and execute remedy similarly to E7-05.

E7-08 Local memory specifications error

Trouble content		DIMM of different specification is detected in the local memory slot.
Section		MFP
Case 1	Cause	DIMM of different specification is installed to the local memory slot.
	Check and remedy	Check the installed DIMM.

* The error occurs when a DIMM which is not recommended by Sharp.

E7-09 Local memory combination error

Trouble content		Local memory slot combination error
Section		MFP
Case 1	Cause	DIMM of other than 256MB is installed to the default slot.
	Check and remedy	Check the combination of installed DIMM.
Case 2	Cause	DIMM of other than 256MB is installed to the expansion slot.
	Check and remedy	Check the combination of installed DIMM.

* When the following combination (E7-09) where operation is not performed properly is used. Local memory (slot 3, slot 4) combination

No.	Local memory		Operation guarantee		When turning on the power
	Slot 4 (Inside)	Slot 3 (Outside)	Hard	Soft	
1	–	–	×	×	E7-09
2	256MB	–	○	○	Normal operation
3	512MB	–	○	×	E7-09
4	256MB	256MB	○	×	E7-09
5	512MB	256MB	○	×	E7-09
6	256MB	512MB	○	○	Normal operation
7	512MB	512MB	○	×	E7-09
8	–	256MB	×	×	E7-09
9	–	512MB	×	×	E7-09

E7-10 Shading trouble (Black correction)

Trouble content		CCD black scan level abnormality when the copy lamp is turned off.
Section		Scanner
Case 1	Cause	Installation error of the CCD unit flat cable
	Check and remedy	Check the installing state of the flat cable to the CCD unit.
Case 2	Cause	CCD unit abnormality
	Check and remedy	Check the CCD unit.
Case 3	Cause	SCU PWB abnormality
	Check and remedy	Check the SCU PWB.

E7-11 Shading trouble (White correction)

Trouble content		CCD white scan level abnormality when the copy lamp is on.
Section		Scanner
Case 1	Cause	Installation error of the CCD unit flat cable
	Check and remedy	Check the installing state of the flat cable to the CCD unit.
Case 2	Cause	Dirt on the mirror, the lens, or the reference white plate.
	Check and remedy	Clean the mirror, the lens, or the reference white plate.
Case 3	Cause	Copy lamp lighting trouble
	Check and remedy	Check the installing state of the flat cable to the copy lamp unit.
Case 4	Cause	CCD unit abnormality
	Check and remedy	Check the CCD unit.
Case 5	Cause	SCU PWB abnormality
	Check and remedy	Check the SCU PWB.

E7-14 SCAN-ASIC trouble

Trouble content		Written register value cannot be read correctly
Section		Scanner
Case 1	Cause	SCU PWB abnormality
	Check and remedy	Check the SCU PWB.

E7-20 LSU BD detection trouble

Trouble content		LSU BD signal is not detected.
Section		PCU
Case 1	Cause	Disconnection or improper connection of harness and connector between LD/BD PWB and LSUcnt PWB
	Check and remedy	Check connection of the harness of each PWB inside the LSU.
Case 2	Cause	1) Optical axis shift 2) BK laser deterioration, power reduction 3) BD PWB trouble
	Check and remedy	1) Use SIM61-1 to check the LSU operation. 2) Replace the LSUcnt/BD PWB. 3) If the trouble cannot be removed by the above 1) to 2), replace the LSU.

E7-21 LSU LD deterioration trouble

Trouble content		The color laser does not light up normally.
Section		PCU
Case 1	Cause	Disconnection or improper connection of harness and connector between LD PWB and LSUcnt PWB
	Check and remedy	Check connection of the harness of each PWB inside the LSU.
Case 2	Cause	Y/M/C laser deterioration
	Check and remedy	1) Use SIM61-1 to check the LSU operation. 2) Replace the LSUcnt PWB. 3) If the trouble cannot be removed by the above 1) to 2), replace the LSU.

E7-28 LSU control ASIC connection abnormality

Trouble content		Access error between the CPU of the PCU PWB and the LSU control ASIC
Section		PCU
Case 1	Cause	<When this trouble occurs in the initial process on turn on the power> Communication connector trouble between the PCU PWB and the LSUcnt PWB (interface PWB). Harness trouble.
	Check and remedy	Check the connector connection between the PCU PWB and the LSUcnt PWB (interface PWB). Check the harness. If the trouble cannot be removed, replace the LSUcnt PWB or the PCU PWB.
Case 2	Cause	<When this trouble occurs on starting printing/during printing, and SIM61-1 is used to check the LSU unit operation for each of B/W and COLOR and the judgment is NG.> Connected the connector between the PCU PWB and the LSUcnt PWB (interface PWB) / Harness trouble
	Check and remedy	Check the harness between the PCU PWB and the LSUcnt PWB (interface PWB). If the trouble cannot be removed, replace the LSUcnt PWB or the PCU PWB.
Case 3	Cause	PCU PWB or LSUcnt PWB (interface PWB) trouble
	Check and remedy	Replace the PCU PWB or the LSUcnt PWB (interface PWB).

E7-29 LSU-ASIC frequency abnormality

Trouble content		Oscillation trouble of the external oscillator used in LSU-ASIC and the internal oscillation circuit
Section		PCU
Case 1	Cause	Trouble of the oscillator on the LSU-ASIC PWB, the resistor and capacitor for the oscillation circuit, and the LSU-ASIC itself.
	Check and remedy	Replace the LSUcnt PWB.

E7-50 Engine connection trouble

Trouble content		Unknown PWB identification information is detected in the PCU PWB.
Section		PCU
Case 1	Cause	A PWB which is incompatible with the machine specifications is connected.
	Check and remedy	1) Replace the PCU PWB. 2) Replace the LSU PWB.
Case 2	Cause	A firmware which is incompatible with the machine specifications is used.
	Check and remedy	Check the kind and the version of the firmware.

E7-55 PWB information sum error (Engine detection)

Trouble content		EEPROM PWB information sum error
Section		PCU
Case 1	Cause	1) EEPROM device error 2) EEPROM device contact failure 3) Device access error due to noises
	Check and remedy	Replace the PCU PWB.

E7-60 Controller connection trouble (Engine detection)

Trouble content		Unknown PWB kind information is detected in the MFPcnt PWB. A PWB/firmware which is not compatible with the machine specifications is connected.
Section		MFP
Case 1	Cause	Controller PWB trouble
	Check and remedy	Replace the controller PWB.
Case 2	Cause	A firmware which is not compatible with the machine specifications is applied.
	Check and remedy	Check the kind and the version of the firmware.

E7-61 Controller connection trouble (Engine)

Trouble content		MFPcnt PWB connection trouble Compatibility trouble between the controller and the engine
Section		MFP
Case 1	Cause	Combination trouble of the controller PWB and the engine
	Check and remedy	Check the controller PWB. Check the combination between the controller PWB and the engine.

E7-62 Controller connection trouble (Scanner)

Trouble content		Controller connection trouble Compatibility trouble between the controller and the scanners
Section		MFP
Case 1	Cause	Combination trouble between the controller PWB and the engine
	Check and remedy	Replace the controller PWB. Check the combination between the controller PWB and the engine.

E7-65 PWB information sum error (Controller detection)

Trouble content		EEPROM PWB information sum error
Section		MFP
Case 1	Cause	1) EEPROM device trouble 2) EEPROM device contact failure 3) Device access error due to noises
	Check and remedy	Replace the MFPcnt PWB.

E7-70 Scanner connection trouble

Trouble content		Unknown identification information is detected in the SCU PWB.
Section		SCU
Case 1	Cause	SCU PWB trouble
	Check and remedy	Replace the SCU PWB.
Case 2	Cause	A firmware which is incompatible with the machine specifications is connected.
	Check and remedy	Check the kind and the version of the firmware.

E7-75 PWB information sum error (Scanner detection)

Trouble content		EEPROM PWB information sum error
Section		SCU
Case 1	Cause	1) EEPROM device trouble 2) EEPROM device contact failure 3) Device access error due to noises
	Check and remedy	Replace the scanner control PWB.

E7-80 Communication trouble between the controller and the scanner

Trouble content		Communication trouble between the MFP and the scanner MFP detection Communication establishment error/Framing/Parity/Protocol error
Section		MFP
Case 1	Cause	SCU PWB connector connection trouble
	Check and remedy	Check the connector connection between the SCU PWB and the MFPcnt PWB.
Case 2	Cause	Harness trouble between the SCU PWB and the MFPcnt PWB
	Check and remedy	Check the harness between the SCU PWB and the MFPcnt PWB.
Case 3	Cause	Broken connector pin of the SCU PWB mother board
	Check and remedy	Check grounding of the machine.

E7-90 Communication trouble between the controller and the engine

Trouble content		Communication trouble between the MFP and the PCU (MFP detection) Communication establishment error/Framing/Parity/Protocol error
Section		MFP
Case 1	Cause	PCU PWB connector connection trouble
	Check and remedy	Check the connector connection between the PCU PWB and the MFPcnt PWB.
Case 2	Cause	Harness trouble between the PCU PWB and the MFPcnt PWB
	Check and remedy	Check the harness between the PCU PWB and the MFPcnt PWB.
Case 3	Cause	Broken connector pin of the PCU PWB mother board
	Check and remedy	Check grounding of the machine.

EE-EC Auto developer adjustment trouble (The sample level for every rotation is other than 128 ± 10).

Trouble content		Auto developer adjustment trouble (The sample level for every rotation is other than 128 ± 10.) <Detection only with SIM25-2, no trouble memory, only display>
Section		PCU
Case 1	Cause	Toner density sensor trouble, charging voltage/developing voltage trouble, toner density trouble, developing unit trouble, PCU PWB trouble
	Check and remedy	Use SIM25-2 to execute the auto development adjustment.

EE-EL Auto developer adjustment trouble (overtoner error)

Trouble content		The sample level is 76 or below, or the control voltage is 208V or above. <Detection only with SIM25-2, no trouble memory, only display>
Section		PCU
Case 1	Cause	Toner density sensor trouble, charging voltage/developing voltage trouble, toner density trouble, developing unit trouble, PCU PWB trouble
	Check and remedy	Use SIM25-2 to execute the auto development adjustment.

EE-EU Auto development adjustment trouble (Under-toner abnormality)

Trouble content		The sample level is 178 or above, or the control voltage is 51V or below. <Detection only with SIM25-2, no trouble memory, only display>
Section		PCU
Case 1	Cause	Toner density sensor trouble, charging voltage/developing voltage trouble, toner density trouble, developing unit trouble, PCU PWB trouble
	Check and remedy	Use SIM25-2 to execute the auto development adjustment.

F1-00 Finisher communication trouble (Machine side detection)

Trouble content		Communication line test error when turning on the power or after canceling an exclusion simulation. Communication error with the finisher
Section		PCU
Case 1	Cause	Malfunction due to noises
	Check and remedy	Turn OFF/ON the power to cancel.
Case 2	Cause	PCU finisher connector or harness connection error or disconnection
	Check and remedy	Check the connector and harness in the communication line.
Case 3	Cause	Finisher control PWB trouble
	Check and remedy	Replace the finisher control PWB.
Case 4	Cause	Control PWB (PCU) trouble
	Check and remedy	Replace the PCU PWB.

F1-02 Saddle finisher transport motor trouble

Trouble content		Transport drive motor trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, saddle finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the transport motor (FFM). Replace the finisher control PWB.

F1-03 Finisher paddle motor trouble (MX-FNX2), finisher swing motor trouble (MX-FNX1)

Trouble content		Paddle motor operation trouble (MX-FNX2) Swing motor operation trouble (MX-FNX1)
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the motor (FPM/FSWM). Replace the finisher control PWB.

F1-08 Finisher stapler shift motor trouble

Trouble content		Stapler shift motor operation trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the staple motor (FSM). Replace the finisher control PWB.

F1-10 Finisher staple motor abnormality

Trouble content		Staple operation trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, saddle finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the staple motor (FFSM). Replace the finisher control PWB.

F1-11 Finisher bundle process motor abnormality

Trouble content		Bundle process motor trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble (MX-FNX2)
	Check and remedy	Use SIM3-3 to check the operation of the bundle process motor (FAM). Replace the finisher control PWB.

F1-15 Finisher tray lift motor abnormality

Trouble content		Lift motor trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the tray lift motor (FLM/FTLM). Replace the finisher control PWB.

F1-19 Finisher pre-alignment motor abnormality

Trouble content		Pre-alignment motor trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, saddle finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the pre-alignment motor (FFJM). Replace the finisher control PWB.

F1-20 Finisher after-alignment motor abnormality

Trouble content		After-alignment motor trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the after-alignment motor (FRJM). Replace the finisher control PWB.

F1-21 Finisher fan motor abnormality (MX-FNX1), Finisher interface fan motor abnormality (MX-FNX2)

Trouble content		Cooling fan motor trouble (MX-FNX1) Interface transport fan motor trouble (MX-FNX2)
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation of the fan motor (FFAM/FJFM). Replace the finisher control PWB.

F1-31 Finisher folding sensor trouble (MX-FNX2)

Trouble content		Sensor input value abnormality
Section		PCU
Case 1	Cause	Sensor breakage, harness disconnection, finisher control PWB trouble (MX-FNX2)
	Check and remedy	Use SIM3-2 to check the operation of the sensor (FFPD). Replace the finisher control PWB.

F1-32 Communication trouble between the finisher and the punch unit (MX-FN2)

Trouble content		Finisher and punch unit communication trouble (MX-FNX2)
Section		PCU
Case 1	Cause	Malfunction due to noises
	Check and remedy	Cancel by turning OFF/ON the power.
Case 2	Cause	Connector/harness connection error or disconnection between the finisher and the punch unit
	Check and remedy	Check the connector and the harness in the communication line.
Case 3	Cause	Finisher control PWB trouble (MX-FNX2)
	Check and remedy	Replace the finisher control PWB.
Case 4	Cause	Control PWB (PCU) trouble
	Check and remedy	Replace the control PWB (PCU) trouble

F1-33 Finisher punch shift motor trouble

Trouble content		Punch shift motor operation abnormality
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble, punch control PWB trouble (MX-FNX2)
	Check and remedy	Use SIM3-3 to check the operation of the punch shift motor (FPSM). Replace the finisher punch unit (Replace the punch control PWB.).

F1-34 Finisher punch motor trouble

Trouble content		Punch motor operation abnormality
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, motor overvoltage, finisher control PWB trouble, punch control PWB trouble (MX-FNX2)
	Check and remedy	Use SIM3-3 to check the operation of the punch motor (FPNW). Replace the finisher punch unit (Replace the punch control PWB.).

F1-35 Finisher punch side registration sensor trouble (MX-FNX2)

Trouble content		Sensor input value abnormality
Section		PCU
Case 1	Cause	Sensor breakage, harness disconnection, saddle finisher control PWB trouble (MX-FNX2), punch control PWB trouble (MX-FNX2)
	Check and remedy	Use SIM3-2 to check the operation of the punch section sensor (FPSHPD/FPSD1-4). Replace the finisher punch unit (Replace the punch control PWB.).

F1-36 Finisher punch registration sensor trouble (MX-FNX2)

Trouble content		Sensor input value abnormality
Section		PCU
Case 1	Cause	Sensor breakage, harness disconnection, saddle finisher control PWB trouble (MX-FNX2), punch control PWB trouble (MX-FNX2)
	Check and remedy	Use SIM3-2 to check the operation of the punch timing sensor (FPTD). Replace the finisher punch unit (Replace the punch control PWB.).

F1-37 Finisher backup RAM trouble

Trouble content		Backup RAM data garbled
Section		PCU
Case 1	Cause	Finisher control PWB trouble, malfunction due to electrical noises
	Check and remedy	Replace the finisher control PWB.

F1-38 Finisher punch backup RAM trouble (MX-FNX2)

Trouble content		Punch unit backup RAM data garbled
Section		PCU
Case 1	Cause	Punch control PWB trouble, malfunction due to electrical noises
	Check and remedy	Replace the punch control PWB.

F1-39 Finisher punch dust sensor trouble (MX-FNX2)

Trouble content		Punch dust sensor detection trouble
Section		PCU
Case 1	Cause	Sensor breakage, harness disconnection, finisher control PWB trouble (MX-FNX2), punch control PWB trouble (MX-FNX2)
	Check and remedy	Use SIM3-2 to check the operation of the sensor punch dust sensor (FPDD). Replace the finisher control PWB or the punch control PWB.

F1-40 Saddle finisher punch power interruption trouble (MX-FNX2)

Trouble content		When the punch unit power interruption is detected.
Section		PCU
Case 1	Cause	Harness disconnection, punch control PWB trouble
	Check and remedy	Use SIM3-3 to check the operation punch motor (FPNW). Replace the finisher punch unit (Replace the punch control PWB.).

F1-50 Finisher incompatibility trouble

Trouble content		Detection of finisher incompatible with MX-2700**/ 2300**
Section		PCU
Case 1	Cause	Connection of the AR-F13, etc. which is incompatible with MX-2700**/2300** is detected.
	Check and remedy	Connect the MX-FNX1/MX-FNX2.

F2-39 Process thermistor trouble

Trouble content		Process thermistor open
Section		PCU
Case 1	Cause	Process thermistor harness connection trouble
	Check and remedy	Check the connection of the harness, connector of the process thermistor.
Case 2	Cause	Process thermistor trouble
	Check and remedy	Check the connection of the process thermistor.
Case 3	Cause	PCU PWB trouble
	Check and remedy	Check the PCU PWB.

F2-40 Toner empty sensor abnormality (BLACK)

Trouble content		Toner empty sensor output abnormality. Sample level 25 or less or 231 or above.
Section		PCU
Case 1	Cause	The connector is not installed.
	Check and remedy	Check the connection of the connector harness to the PCU PWB. Check the connection of the toner empty sensor.
Case 2	Cause	Connector harness trouble
	Check and remedy	Check the harness disconnection.
Case 3	Cause	Cartridge trouble
	Check and remedy	Check the cartridge connection.

F2-41 Toner empty sensor abnormality (CYAN)

Trouble content		Toner empty sensor output abnormality. Sample level 25 or less or 231 or above.
Section		PCU
Case 1	Cause	The connector is not installed.
	Check and remedy	Check the connection of the connector harness to the PCU PWB. Check the connection of the toner empty sensor.
Case 2	Cause	Connector harness trouble
	Check and remedy	Check the harness disconnection.
Case 3	Cause	Cartridge trouble
	Check and remedy	Check the cartridge connection.

F2-42 Toner empty sensor abnormality (MAGENTA)

Trouble content		Toner empty sensor output abnormality. Sample level 25 or less or 231 or above.
Section		PCU
Case 1	Cause	The connector is not installed.
	Check and remedy	Check the connection of the connector harness to the PCU PWB. Check the connection of the toner empty sensor.
Case 2	Cause	Connector harness trouble
	Check and remedy	Check the harness disconnection.
Case 3	Cause	Cartridge trouble
	Check and remedy	Check the cartridge connection.

F2-43 Toner empty sensor abnormality (YELLOW)

Trouble content		Toner empty sensor output abnormality. Sample level 25 or less or 231 or above.
Section		PCU
Case 1	Cause	The connector is not installed.
	Check and remedy	Check the connection of the connector harness to the PCU PWB. Check the connection of the toner empty sensor.
Case 2	Cause	Connector harness trouble
	Check and remedy	Check the harness disconnection.
Case 3	Cause	Cartridge trouble
	Check and remedy	Check the cartridge connection.

F2-44 Black exclusive image density sensor trouble (Transfer belt surface reflection ratio abnormality)

Trouble content		The transfer belt surface is scanned by the image density sensor before starting the process control, and adjust the sensor gain so that the output is kept at a certain level. However, the output is not within the specified range though the senor gain is adjusted.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble, calibration plate solenoid operation trouble
	Check and remedy	Use SIM44-2 to execute the process control sensor gain adjustment. If "ERROR" is displayed, check the sensor, the harness, the calibration plate solenoid operation for any trouble. If the adjustment is completed, check the transfer belt surface state.

F2-45 Color exclusive image density sensor trouble (Calibration plate surface reflection ratio abnormality)

Trouble content		The calibration plate surface is scanned by the image density sensor before starting the process control, and adjust the sensor gain so that the output is kept at a certain level. However, the output is not within the certain level though the senor gain is adjusted.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU PWB and the image density sensor, image density sensor dirt, calibration plate dirt, calibration plate solenoid operation trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the calibration plate solenoid operation.

F2-49 LSU thermistor trouble

Trouble content		The detection temperature is out of the range of 5°C to 55°C.
Section		PCU
Case 1	Cause	LSU thermistor harness connection trouble
	Check and remedy	Check the connection of the LSU thermistor harness and connector. If the trouble cannot be removed, replace the LSU thermistor or the PCU PWB.
Case 2	Cause	LSU thermistor trouble, PCU PWB trouble
	Check and remedy	Check the PCU PWB. If the trouble cannot be removed, replace the LSU thermistor or the PCU PWB.

F2-50 K phase sensor sensing trouble

Trouble content		Detection is made by interruption of light in the sensor section of the projection rib on the drum drive gear to control the BK drum phase. The detection signal cannot be acquired and phase control cannot be made.
Section		PCU
Case 1	Cause	Sensor connector connection trouble
	Check and remedy	Check the sensor connector connection.
Case 2	Cause	Dirt on the sensor light emitting section, or installation trouble
	Check and remedy	Check for dirt on the sensor or check the installation state.
Case 3	Cause	Drum drive gear upper rib breakage, sensor trouble
	Check and remedy	If there is no trouble in the rib, replace the sensor. (Use SIM30-1 "DHPD_K" to check interruption or transmission of light.)

F2-51 CL phase sensor sensing trouble

Trouble content		Detection is made by interruption of light in the sensor section of the projection rib on the drum drive gear to control the phases of all the color drums. The detection signal cannot be acquired and phase control cannot be made.
Section		PCU
Case 1	Cause	Sensor connector connection trouble
	Check and remedy	Check the sensor connector connection.
Case 2	Cause	Dirt on the sensor light emitting section, or installation trouble
	Check and remedy	Check for dirt on the sensor or check the installation state.
Case 3	Cause	Drum drive gear upper rib breakage, sensor trouble
	Check and remedy	If there is no trouble in the rib, replace the sensor. (Use SIM30-1 "DHPD_CL" to check interruption or transmission of light.)

F2-58 Process humidity sensor trouble

Trouble content		Process humidity sensor open
Section		PCU
Case 1	Cause	Process humidity sensor harness connection trouble
	Check and remedy	Check the harness and connector connection of the process humidity sensor.
Case 2	Cause	Process humidity sensor trouble
	Check and remedy	Check the process humidity sensor.
Case 3	Cause	PCU PWB trouble
	Check and remedy	Check the PCU PWB.

F2-64 Toner supply abnormality (BLACK)

Trouble content		Toner end with the remaining quantity of 50% or more. The toner supply time exceeds 3 times as much as the specified time.
Section		PCU
Case 1	Cause	Toner motor section connector harness trouble
	Check and remedy	Check the connector connection of the toner motor section. Check the connector harness (TM) connection to the main PWB.
Case 2	Cause	Toner motor and toner density sensor trouble
	Check and remedy	Check the toner density sensor output. (SIM25-1) Check that the toner transport pipe is not clogged between the toner cartridge and the developing unit. Replace the toner cartridge (CRUM) if necessary. If replacement of the toner cartridge (CRUM) does not clear the trouble, check the developing unit.

F2-65 Toner supply abnormality (CYAN)

Trouble content		Toner end with the remaining quantity of 50% or more. The toner supply time exceeds 3 times as much as the specified time.
Section		PCU
Case 1	Cause	Toner motor section connector harness trouble
	Check and remedy	Check the connector connection of the toner motor section. Check the connector harness (TM) connection to the main PWB.
Case 2	Cause	Toner motor and toner density sensor trouble
	Check and remedy	Check the toner density sensor output. (SIM25-1) Check that the toner transport pipe is not clogged between the toner cartridge and the developing unit. Replace the toner cartridge (CRUM) if necessary. If replacement of the toner cartridge (CRUM) does not clear the trouble, check the developing unit.

F2-66 Toner supply abnormality (MAGENTA)

Trouble content		Toner end with the remaining quantity of 50% or more. The toner supply time exceeds 3 times as much as the specified time.
Section		PCU
Case 1	Cause	Toner motor section connector harness trouble
	Check and remedy	Check the connector connection of the toner motor section. Check the connector harness (TM) connection to the main PWB.
Case 2	Cause	Toner motor and toner density sensor trouble
	Check and remedy	Check the toner density sensor output. (SIM25-1) Check that the toner transport pipe is not clogged between the toner cartridge and the developing unit. Replace the toner cartridge (CRUM) if necessary. If replacement of the toner cartridge (CRUM) does not clear the trouble, check the developing unit.

F2-67 Toner supply abnormality (YELLOW)

Trouble content		Toner end with the remaining quantity of 50% or more. The toner supply time exceeds 3 times as much as the specified time.
Section		PCU
Case 1	Cause	Toner motor section connector harness trouble
	Check and remedy	Check the connector connection of the toner motor section. Check the connector harness (TM) connection to the main PWB.
Case 2	Cause	Toner motor and toner density sensor trouble
	Check and remedy	Check the toner density sensor output. (SIM25-1) Check that the toner transport pipe is not clogged between the toner cartridge and the developing unit. Replace the toner cartridge (CRUM) if necessary. If replacement of the toner cartridge (CRUM) does not clear the trouble, check the developing unit.

F2-70 Toner cartridge improper cartridge detection (BLACK)

Trouble content		Improper data are detected in the CRUM contents when the normal CRUM of the cartridge is detected.
Section		PCU
Case 1	Cause	An improper cartridge is inserted. Toner cartridge trouble
	Check and remedy	Replace the toner cartridge.

F2-71 Toner cartridge improper cartridge detection (CYAN)

Trouble content		Improper data are detected in the CRUM contents when the normal CRUM of the cartridge is detected.
Section		PCU
Case 1	Cause	An improper cartridge is inserted. Toner cartridge trouble
	Check and remedy	Replace the toner cartridge.

F2-72 Toner cartridge improper cartridge detection (MAGENTA)

Trouble content		Improper data are detected in the CRUM contents when the normal CRUM of the cartridge is detected.
Section		PCU
Case 1	Cause	An improper cartridge is inserted. Toner cartridge trouble
	Check and remedy	Replace the toner cartridge.

F2-73 Toner cartridge improper cartridge detection (YELLOW)

Trouble content		Improper data are detected in the CRUM contents when the normal CRUM of the cartridge is detected.
Section		PCU
Case 1	Cause	An improper cartridge is inserted. Toner cartridge trouble
	Check and remedy	Replace the toner cartridge.

F2-74 Toner cartridge CRUM error (BLACK)

Trouble content		CRUM cannot be read or written.
Section		PCU
Case 1	Cause	Connection trouble or disconnection of the connector and the harness between the PCU and the toner cartridge.
	Check and remedy	Check the connector and the harness between the PCU and the toner cartridge.
Case 2	Cause	CRUM trouble
	Check and remedy	Replace the toner cartridge.
Case 3	Cause	Control PWB (PCU) trouble
	Check and remedy	Replace the PCU PWB.

F2-75 Toner cartridge CRUM error (CYAN)

Trouble content		CRUM cannot be read or written.
Section		PCU
Case 1	Cause	Connection trouble or disconnection of the connector and the harness between the PCU and the toner cartridge.
	Check and remedy	Check the connector and the harness between the PCU and the toner cartridge.
Case 2	Cause	CRUM trouble
	Check and remedy	Replace the toner cartridge.
Case 3	Cause	Control PWB (PCU) trouble
	Check and remedy	Replace the PCU PWB.

F2-76 Toner cartridge CRUM error (MAGENTA)

Trouble content		CRUM cannot be read or written.
Section		PCU
Case 1	Cause	Connection trouble or disconnection of the connector and the harness between the PCU and the toner cartridge.
	Check and remedy	Check the connector and the harness between the PCU and the toner cartridge.
Case 2	Cause	CRUM trouble
	Check and remedy	Replace the toner cartridge.
Case 3	Cause	Control PWB (PCU) trouble
	Check and remedy	Replace the PCU PWB.

F2-77 Toner cartridge CRUM error (YELLOW)

Trouble content		CRUM cannot be read or written.
Section		PCU
Case 1	Cause	Connection trouble or disconnection of the connector and the harness between the PCU and the toner cartridge.
	Check and remedy	Check the connector and the harness between the PCU and the toner cartridge.
Case 2	Cause	CRUM trouble
	Check and remedy	Replace the toner cartridge.
Case 3	Cause	Control PWB (PCU) trouble
	Check and remedy	Replace the PCU PWB.

F2-78 Registration exclusive image density sensor trouble (Transfer belt surface reflection ratio abnormality)

Trouble content		The transfer belt surface is scanned by the image density sensor before starting the registration, and adjust the sensor gain so that the output is kept at a certain level. However, the output is not within the specified range though the senor gain is adjusted.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble, calibration plate solenoid operation trouble
	Check and remedy	Check the sensor and the harness. Check the calibration plate solenoid operation and the transfer belt surface state. If the trouble is not cleared, replace the image sensor exclusively used for registration, replace the transfer belt, replace the calibration plate, replace the solenoid, or replace the PCU PWB according to the check result.

F2-80 Half tone process control 1st patch reference value trouble (BLACK)

Trouble content		The low-density rising point or the high-density saturation point cannot be calculated because of a calculation error in the primary approximation formula of the sensor output ratio for the LSU PWM value obtained from the first step patch print result when executing the half tone process control in BLACK.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-81 Half tone process control 1st patch reference value trouble (CYAN)

Trouble content		The low-density rising point or the high-density saturation point cannot be calculated because of a calculation error in the primary approximation formula of the sensor output ratio for the LSU PWM value obtained from the first step patch print result when executing the half tone process control in CYAN.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-82 Half tone process control 1st patch reference value trouble (MAGENTA)

Trouble content		The low-density rising point or the high-density saturation point cannot be calculated because of a calculation error in the primary approximation formula of the sensor output ratio for the LSU PWM value obtained from the first step patch print result when executing the half tone process control in MAGENTA.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-83 Half tone process control 1st patch reference value trouble (YELLOW)

Trouble content		The low-density rising point or the high-density saturation point cannot be calculated because of a calculation error in the primary approximation formula of the sensor output ratio for the LSU PWM value obtained from the first step patch print result when executing the half tone process control in YELLOW.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-84 Half tone process control 2nd patch reference value trouble (BLACK)

Trouble content		The low-density section output is greater than the middle-density section output when connecting the low-density section approximation formula and the middle-density section approximation formula (formula of the sensor output ratio for the LSU PWM value) from the second step patch print result when executing the half tone process control in BLACK.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-85 Half tone process control 2nd patch reference value trouble (CYAN)

Trouble content		The low-density section output is greater than the middle-density section output when connecting the low-density section approximation formula and the middle-density section approximation formula (formula of the sensor output ratio for the LSU PWM value) from the second step patch print result when executing the half tone process control in CYAN.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-86 Half tone process control 2nd patch reference value trouble (MAGENTA)

Trouble content		The low-density section output is greater than the middle-density section output when connecting the low-density section approximation formula and the middle-density section approximation formula (formula of the sensor output ratio for the LSU PWM value) from the second step patch print result when executing the half tone process control in MAGENTA.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-87 Half tone process control 2nd patch reference value trouble (YELLOW)

Trouble content		The low-density section output is greater than the middle-density section output when connecting the low-density section approximation formula and the middle-density section approximation formula (formula of the sensor output ratio for the LSU PWM value) from the second step patch print result when executing the half tone process control in YELLOW.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU sub PWB and the image density sensor, image density sensor dirt, transfer belt cleaning trouble
	Check and remedy	Use SIM44-2 to execute the process control gain adjustment. If "ERROR" is displayed, check the sensor and the harness. If the adjustment is completed, check the drum surface state and the belt surface state.

F2-92 High-density process control density correction error (CYAN)

Trouble content		The patch density value is not in the range of the density correction reference density value (STD value) ±30% at the upper limit or the lower limit bias voltage when executing the high density process control.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU PWB-image density sensor, dirt on image density sensor, transfer belt cleaning trouble
	Check and remedy	1) Use SIM44-2 to execute the process control sensor gain adjustment. 2) If an error occurs, check the sensors and the harnesses. 3) If the adjustment of 1) is completed, check the drum surface state, the belt surface state, etc.

F2-93 High-density process control density correction error (MAGENTA)

Trouble content		The patch density value is not in the range of the density correction reference density value (STD value) ±30% at the upper limit or the lower limit bias voltage when executing the high density process control.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU PWB-image density sensor, dirt on image density sensor, transfer belt cleaning trouble
	Check and remedy	1) Use SIM44-2 to execute the process control sensor gain adjustment. 2) If an error occurs, check the sensors and the harnesses. 3) If the adjustment of 1) is completed, check the drum surface state, the belt surface state, etc.

F2-94 High-density process control density correction error (YELLOW)

Trouble content		The patch density value is not in the range of the density correction reference density value (STD value) ±30% at the upper limit or the lower limit bias voltage when executing the high density process control.
Section		PCU
Case 1	Cause	Image density sensor trouble, harness connection trouble between PCU PWB-image density sensor, dirt on image density sensor, transfer belt cleaning trouble
	Check and remedy	1) Use SIM44-2 to execute the process control sensor gain adjustment. 2) If an error occurs, check the sensors and the harnesses. 3) If the adjustment of 1) is completed, check the drum surface state, the belt surface state, etc.

F3-12 Main unit tray 1 lift-up trouble

Trouble content		LUD1 does not turn ON within the specified time.
Section		PCU
Case 1	Cause	LUD1 sensor trouble, harness connection trouble between PCU PWB, the lift-up unit, and the paper feed unit.
	Check and remedy	Check the harness and the connector of LUD1.
Case 2	Cause	Tray 1 lift-up motor trouble
	Check and remedy	Check the lift-up unit.

F3-22 Main unit tray 2 lift-up trouble

Trouble content		LUD2 does not turn ON within the specified time.
Section		PCU
Case 1	Cause	LUD2 sensor trouble, harness connection trouble between PCU PWB, the lift-up unit, and the paper feed unit.
	Check and remedy	Check the harness and the connector of LUD2.
Case 2	Cause	Tray 2 lift-up motor trouble
	Check and remedy	Check the lift-up unit.

H2-00 Non-contact thermistor detection thermistor open (TH_UM_AD2)

Trouble content		Thermistor open
Section		PCU
Case 1	Cause	Thermistor trouble, control PWB trouble, fusing section connector connection trouble, AC power source trouble, fusing unit not-installed
	Check and remedy	Check the harness and the connector from the thermistor to the control PWB.

H2-01 Lower thermistor open (TH_LM)

Trouble content		Thermistor open
Section		PCU
Case 1	Cause	Thermistor trouble, control PWB trouble, fusing section connector connection trouble, AC power source trouble, fusing unit not-installed
	Check and remedy	Check the harness and the connector from the thermistor to the control PWB.

H2-02 Sub thermistor open (TH_US)

Trouble content		Thermistor open
Section		PCU
Case 1	Cause	Thermistor trouble, control PWB trouble, fusing section connector connection trouble, AC power source trouble, fusing unit not-installed
	Check and remedy	Check the harness and the connector from the thermistor to the control PWB.

H2-03 Non-contact thermistor compensation thermistor open (TH_UM_AD1)

Trouble content		Thermistor open
Section		PCU
Case 1	Cause	Thermistor trouble, control PWB trouble, fusing section connector connection trouble, AC power source trouble
	Check and remedy	Check the harness and the connector from the thermistor to the control PWB.

H3-00 Fusing section high temperature trouble (TH_UM)

Trouble content		The fusing temperature inside the PWB exceeds the specified level.
Section		PCU
Case 1	Cause	Thermistor trouble, control PWB trouble, fusing section connector connection error, AC power source trouble
	Check and remedy	1) Use SIM5-2 to check blinking of the heater lamp. 2) If it blinks normally, check the thermistor and the harness. Check the control PWB thermistor input circuit section. 3) If the heater lamp keep lighting, check the AC PWB and the control PWB lamp control circuit. 4) Use SIM14 to cancel the trouble.

H3-01 Fusing section high temperature trouble (TH_LM)

Trouble content		The fusing temperature inside the PWB exceeds the specified level.
Section		PCU
Case 1	Cause	Thermistor trouble, control PWB trouble, fusing section connector connection error, AC power source trouble
	Check and remedy	1) Use SIM5-2 to check blinking of the heater lamp. 2) If it blinks normally, check the thermistor and the harness. Check the control PWB thermistor input circuit section. 3) If the heater lamp keep lighting, check the AC PWB and the control PWB lamp control circuit. 4) Use SIM14 to cancel the trouble.

H3-02 Sub thermistor fusing section high temperature trouble (TH_US)

Trouble content		The fusing temperature inside the PWB exceeds the specified level.
Section		PCU
Case 1	Cause	Thermistor trouble, control PWB trouble, fusing section connector connection error, AC power source trouble
	Check and remedy	1) Use SIM5-2 to check blinking of the heater lamp. 2) If it blinks normally, check the thermistor and the harness. Check the control PWB thermistor input circuit section. 3) If the heater lamp keep lighting, check the AC PWB and the control PWB lamp control circuit. 4) Use SIM14 to cancel the trouble.

H4-00 Fusing section low temperature trouble (TH_UM_AD2)

Trouble content		The temperature does not reach the specified level within the specified time after turning on the power relay.
Section		PCU
Case 1	Cause	Thermistor trouble, heater lamp trouble, PCU PWB trouble, thermostat trouble, AC power source trouble, interlock switch trouble
	Check and remedy	1) Use SIM5-2 to check blinking of the heater lamp. 2) If it blinks normally, check the thermistor and the harness. Check the control PWB thermistor input circuit section. 3) If it is not lighted, check for the heater lamp disconnection and the thermostat breakage. Check the interlock switch. Check the AC PWB and the PCU PWB lamp control circuit. 4) Use SIM14 to cancel the trouble.

H4-01 Fusing section low temperature trouble (TH_LM)

Trouble content		The temperature does not reach the specified level within the specified time after turning on the power relay.
Section		PCU
Case 1	Cause	Thermistor trouble, heater lamp trouble, PCU PWB trouble, thermostat trouble, AC power source trouble, interlock switch trouble
	Check and remedy	1) Use SIM5-2 to check blinking of the heater lamp. 2) If it blinks normally, check the thermistor and the harness. Check the control PWB thermistor input circuit section. 3) If it is not lighted, check for the heater lamp disconnection and the thermostat breakage. Check the interlock switch. Check the AC PWB and the PCU PWB lamp control circuit. 4) Use SIM14 to cancel the trouble.

H4-02 Sub thermistor fusing section low temperature trouble (TH_US)

Trouble content		The temperature does not reach the specified level within the specified time after turning on the power relay.
Section		PCU
Case 1	Cause	Thermistor trouble, heater lamp trouble, PCU PWB trouble, thermostat trouble, AC power source trouble, interlock switch trouble
	Check and remedy	1) Use SIM5-2 to check blinking of the heater lamp.. 2) If it blinks normally, check the thermistor and the harness. Check the control PWB thermistor input circuit section. 3) If it is not lighted, check for the heater lamp disconnection and the thermostat breakage. Check the interlock switch. Check the AC PWB and the PCU PWB lamp control circuit. 4) Use SIM14 to cancel the trouble.

H4-30 Thermistor differential input trouble (TH_UM)

Trouble content		TH_UM_AD1 and TH_UM_AD2 do not exceed the specified level (50 count with the AD value) within 1minute after HL_UM is turned on.
Section		PCU
Case 1	Cause	HL_UM does not turn on. Thermistor trouble, harness trouble, PCU PWB trouble
	Check and remedy	1) Use SIM5-2 to check blinking of the heater lamp. 2) If it blinks normally, check the thermistor and the harness. Check the PCU PWB thermistor input circuit section. 3) If it is not lighted, check for the heater lamp disconnection and the thermostat breakage. Check the interlock switch. Check the AC PWB and the PCU PWB lamp control circuit. 4) Use SIM14 to cancel the trouble.

H5-01 5 continuous detection of POD1 not-reached jam

Trouble content		5 continuous detection of POD1 not-reached jam
Section		PCU
Case 1	Cause	The fusing jam is not removed completely. (Jam paper remains.)
	Check and remedy	Check the fusing section for jam paper. (winding, etc.)
Case 2	Cause	POD1 sensor trouble or harness connection trouble
	Check and remedy	Check the POD1 sensor harness. Use SIM14 to cancel the trouble.
Case 3	Cause	Fusing unit installation trouble
	Check and remedy	Check the fusing unit installation.

L1-00 Mirror feed trouble

Trouble content		Mirror feed is not completed within the specified time.
Section		Scanner
Case 1	Cause	Mirror unit trouble, mirror wire disengagement
	Check and remedy	Use SIM1-1 to check the mirror operation.

L3-00 Mirror return trouble

Trouble content		Mirror return is not completed within the specified time.
Section		Scanner
Case 1	Cause	Mirror unit trouble, mirror wire disengagement
	Check and remedy	Use SIM1-1 to check the mirror operation.

L4-02 Paper feed motor lock trouble

Trouble content		When the paper feed motor is rotated in warming up or in canceling a jam and the lock signal is not detected within 1sec.
Section		PCU
Case 1	Cause	Paper feed motor trouble, harness connection trouble between PCU PWB and paper feed motor, control circuit trouble
	Check and remedy	Use SIM6-1 to check the paper feed motor operation. Check the harness and the connector between the PCU PWB and the paper feed motor.

L4-04 Developing motor trouble (BLACK)

Trouble content		The motor lock signal is detected during rotation of the developing motor.
Section		PCU
Case 1	Cause	Harness connection trouble between the PCU PWB and the developing motor.
	Check and remedy	Check the harness and the connector between the PCU PWB and the developing motor.
Case 2	Cause	Developing motor trouble, control circuit trouble
	Check and remedy	Use SIM25-1 to check the operation of the developing motor.

L4-05 Developing motor trouble (COLOR)

Trouble content		The motor lock signal is detected during rotation of the developing motor.
Section		PCU
Case 1	Cause	Harness connection trouble between the PCU PWB and the developing motor.
	Check and remedy	Check the harness and the connector between the PCU PWB and the developing motor.
Case 2	Cause	Developing motor trouble, control circuit trouble
	Check and remedy	Use SIM25-1 to check the operation of the developing motor.

L4-06 Transfer belt separation position sensor trouble

Trouble content		When separating the primary transfer belt unit, change in the separation position sensor characteristics is not detected within the specified time.
Section		PCU
Case 1	Cause	Harness connection trouble between the PCU PWB and the separation position sensor
	Check and remedy	Check the harness between the PCU PWB and the separation position sensor.
Case 2	Cause	The belt position sensor is not interrupted or it is always interrupted. Belt separation clutch operation trouble
	Check and remedy	Use SIM6-3 to check the belt separation operation.
Case 3	Cause	The primary transfer belt unit is not installed.
	Check and remedy	Install the primary transfer belt.

L4-11 Shift motor trouble

Trouble content		When the shift motor is initialized, no characteristics change of the shifter home position sensor is not detected within the specified time.
Section		PCU
Case 1	Cause	Shift motor trouble
	Check and remedy	Use SIM6-1 to check the operation of the shift motor.
Case 2	Cause	Harness connection trouble between the PCU PWB and the shift motor, control circuit trouble
	Check and remedy	Use SIM30-1 to check the shifter home position sensor. Check the harness and the connector between the PCU PWB and the shift motor.
Case 3	Cause	When the finisher is installed with the finisher connector disconnected and when the finisher communication trouble occurs.
	Check and remedy	Connect the finisher connector. When the communication trouble occurs between the PCU and the finisher, refer to the content of F1-00.

L4-30 Controller fan/HDD fan motor trouble

Trouble content		1) The motor lock signal is detected during rotation of the controller fan motor. 2) The motor lock signal is detected during rotation of the HDD fan motor.
Section		MFP
Case 1	Cause	Fan motor trouble
	Check and remedy	Use SIM6-2 to check the operation of the fan motor.
Case 2	Cause	Harness connection trouble between the mother PWB and the fan motor.
	Check and remedy	Check the harness and the connector between the mother PWB and the fan motor.
Case 3	Cause	Control circuit trouble
	Check and remedy	Replace the controller PWB.
Case 4	Cause	Mother PWB trouble.
	Check and remedy	Replace the mother PWB.

L4-31 Paper exit cooling fan trouble

Trouble content		When the paper exit cooling fan is operated, the fan operation signal is not detected within the specified time.
Section		PCU
Case 1	Cause	Fan connector disconnection
	Check and remedy	Check the harness and the connector between the PCU PWB and the fan.
Case 2	Cause	Fan does not rotate because of other trouble.
	Check and remedy	Use SIM6-2 to check that the fan is rotation actually.

L4-32 Power cooling fan/ozone exhaust fan trouble

Trouble content		When the power cooling fan/ozone exhaust fan is operated, the fan operation signal is not detected within the specified time.
Section		PCU
Case 1	Cause	Power cooling fan or ozone exhaust fan connector disconnection
	Check and remedy	Check the harness and the connector between the PCU PWB and the fan.
Case 2	Cause	Fan does not rotate because of other trouble
	Check and remedy	Use SIM6-2 to check that the fan is actually rotating.

L6-10 Polygon motor lock detection

Trouble content		It is judged that the LSU polygon motor lock signal is not outputted, and the lock signal is checked after 7 sec from starting rotation of the polygon motor and it is judged that the polygon motor does not rotate properly.
Section		LSU
Case 1	Cause	Disconnection of the LSU connector or the LSU inside harness, or breakage
	Check and remedy	Check connection of the harness and the connector. If the trouble cannot be removed, replace the LSUcnt PWB or the LSU.
Case 2	Cause	Polygon motor trouble, LSU PWB trouble
	Check and remedy	Use SIM61-1 to check the operation of the polygon motor. If the trouble cannot be removed, replace the LSUcnt PWB or the LSU.

L8-01 No full wave signal

Trouble content		No full wave signal is detected.
Section		PCU
Case 1	Cause	Harness trouble
	Check and remedy	Check connection of the harness and the connector.
Case 2	Cause	Power unit trouble
	Check and remedy	Replace the power unit.
Case 3	Cause	PCU PWB trouble
	Check and remedy	Replace the PCU PWB.

L8-02 Full wave signal width abnormality

Trouble content		The full wave signal is judged as frequency abnormality. (The detection frequency is judged as 65Hz or above or 45Hz or less.)
Section		PCU
Case 1	Cause	Harness trouble
	Check and remedy	Check the harness and the connector connection.
Case 2	Cause	Power unit trouble
	Check and remedy	Replace the power unit.
Case 3	Cause	PCU PWB trouble
	Check and remedy	Replace the PCU PWB.

L8-20 Power controller communication trouble

Trouble content		Communication establishment error/Framing/Parity/Protocol error
Section		MFP
Case 1	Cause	Connector connection trouble between the mother board PWB and the MFPcnt PWB. MFPcnt PWB mother board connector pin breakage
	Check and remedy	Check the connector connection between the mother board PWB and the MFPcnt PWB. Check grounding of the machine.
Case 2	Cause	Mother PWB trouble
	Check and remedy	Replace the mother PWB.
Case 3	Cause	Mother PWB jumper error
	Check and remedy	Set the mother PWB jumper to the Default side.

PC--- Personal counter not installed

Trouble content		The personal counter is not installed.
Section		MFP
Case 1	Cause	The personal counter is not installed.
	Check and remedy	Install the personal counter.

U1-01 Battery trouble

Trouble content		Backup SRAM battery voltage fall
Section		MFP
Case 1	Cause	1) Battery life 2) Battery circuit abnormality
	Check and remedy	Check that the battery voltage is about 2.5V or above.

U2-00 EEPROM read/write error (MFP detection)

Trouble content		EEPROM device read/write error
Section		MFP
Case 1	Cause	EEPROM device trouble
	Check and remedy	Replace the EEPROM device.
Case 2	Cause	EEPROM device contact failure
	Check and remedy	Check that EEPROM device is properly inserted.
Case 3	Cause	Device access error due to electrical noises
	Check and remedy	Replace the MFPcnt PWB.

U2-05 HDD/Flash/EEPROM data discrepancy

Trouble content		A HDD or Flash memory for user authentication different from that used before turn off the power is installed.
Section		MFP
Case 1	Cause	HDD replacement or Flash memory replacement
	Check and remedy	Initialize the authentication information with SIM16, and import the backup data (exported data) if any.

U2-10 SRAM user authentication index check sum error

Trouble content		User index information (basic data of user authentication) check sum error on the SRAM
Section		MFP
Case 1	Cause	1) SRAM trouble 2) Hang-up of the control circuit due to electrical noises 3) MFPcnt PWB SRAM access circuit trouble
	Check and remedy	Use SIM16 to cancel U2 trouble.

U2-11 EEPROM check sum error (MFP detection)

Trouble content		Counter information check sum error on the EEPROM
Section		MFP
Case 1	Cause	1) EEPROM device trouble 2) EEPROM device contact failure 3) Device access error due to electrical noises
	Check and remedy	Use SIM16 to cancel U2 trouble.

U2-22 SRAM memory check sum error

Trouble content		MFPcnt PWB SRAM memory check sum error
Section		MFP
Case 1	Cause	SRAM trouble
	Check and remedy	1) Initialize the communication management table registered in SRAM and the FAX soft switch. 2) Since the registered contents have been deleted, register them again.
Case 2	Cause	Control circuit hang-up due to electrical noises
	Check and remedy	Use SIM16 to cancel U2 trouble.
Case 3	Cause	MFPcnt PWB SRAM access circuit trouble
	Check and remedy	Replace the MFPcnt PWB.

U2-23 MFPC section SRAM memory individual data check sum error

Trouble content		MFPcnt PWB SRAM memory individual data check sum error (Communication management table, sender registration data, etc.)
Section		MFP
Case 1	Cause	SRAM trouble
	Check and remedy	1) Turn OFF/ON the power to initialize the data related to the check sum error automatically. 2) Since the registered contents have been deleted, register them again.
Case 2	Cause	Control circuit hang-up due to electrical noises
	Check and remedy	Use SIM16 to cancel U2 trouble.
Case 3	Cause	MFPcnt PWB SRAM access circuit trouble
	Check and remedy	Replace the MFPcnt PWB.

U2-24 SRAM memory user authentication counter check sum error

Trouble content		Check sum error of the user counter on SRAM
Section		MFP
Case 1	Cause	1) SRAM trouble 2) Control circuit hang-up due to electrical noises 3) MFPcnt PWB SRAM access circuit trouble
	Check and remedy	Use SIM16 to cancel U2 trouble.

U2-25 Flash memory user authentication counter check sum error

Trouble content		Check sum error of the user authentication counter on FLASH
Section		MFP
Case 1	Cause	Flash trouble. Control circuit hang-up due to electrical noises MFPcnt PWB FLASH access circuit trouble.
	Check and remedy	Use SIM16 to recalculate the check sum of the user counter and save the normal sum value.

U2-30 Serial number data discrepancy (MFP ↔ PCU)

Trouble content		The serial number stored in the PCU differs from that stored in the MFP.
Section		MFP
Case 1	Cause	EEPROM is not changed when the PCU/MFPcnt PWB is replaced.
	Check and remedy	1) Check that EEPROM is properly set. 2) Check that EEPROM on the previous PWB is inserted to the newly installed PWB.

U2-50 HDD section individual data check sum error

Trouble content		MFPcnt HDD individual data check sum error (One-touch, group, program, etc.)
Section		MFP
Case 1	Cause	Write/read error to/from HDD
	Check and remedy	1) Turn OFF/ON the power to initialize the data related to the check sum error contents. 2) Since the registered contents have been deleted, register them again. 3) If the trouble is not canceled, replace the HDD.
Case 2	Cause	Control circuit hang-up due to electrical noises
	Check and remedy	Use SIM16 to cancel U2 trouble.
Case 3	Cause	MFPcnt PWB HDD access circuit trouble
	Check and remedy	Replace the MFPcnt PWB.

U2-80 EEPROM read/write error (SCU detection)

Trouble content		1) EEPROM version error 2) Write error to EEPROM
Section		Scanner
Case 1	Cause	EEPROM trouble, installation of EEPROM which is not initialized
	Check and remedy	Check that EEPROM is properly set.
Case 2	Cause	SCU PWB EEPROM access circuit trouble
	Check and remedy	To avoid deletion of the counter data/adjustment data, use the simulation to save the counter/adjustment values. (If there is a printer option, execute SIM22-1 to save the counter data and the adjustment values.) Replace the SCU PWB. Use SIM16 to cancel the trouble.

U2-81 Adjustment value check sum error (SCU detection)

Trouble content		EEPROM (SCU) check sum error
Section		Scanner
Case 1	Cause	Control circuit hang-up due to electrical noises
	Check and remedy	Use SIM16 to cancel U2 trouble.
Case 2	Cause	EEPROM trouble
	Check and remedy	To avoid deletion of the counter data/adjustment data, use the simulation to save the counter/adjustment values. (If there is a printer option, execute SIM22-1 to save the counter data and the adjustment values.) Replace the SCU PWB. Use SIM16 to cancel the trouble.
Case 3	Cause	SCU PWB EEPROM access circuit trouble
	Check and remedy	Check that EEPROM is properly set.

U2-90 EEPROM read/write error (PCU detection)

Trouble content		EEPROM version error, write error to EEPROM
Section		PCU
Case 1	Cause	EEPROM trouble, installation of EEPROM which is not initialized
	Check and remedy	Check that EEPROM is properly set.
Case 2	Cause	PCU PWB EEPROM access circuit trouble
	Check and remedy	To avoid deletion of the counter data/adjustment data, use the simulation to save the counter/adjustment values. (If there is a printer option, execute SIM22-1 to save the counter data and the adjustment values.) Replace the PCU PWB. Use SIM16 to cancel the trouble.

U2-91 EEPROM (PCU) check sum error

Trouble content		Check sum error of adjustment value (PCU)
Section		PCU
Case 1	Cause	Control circuit hang-up due to electrical noises
	Check and remedy	Use SIM16 to cancel the trouble.
Case 2	Cause	EEPROM trouble.
	Check and remedy	Check that EEPROM is properly set.
Case 3	Cause	PCU PWB EEPROM access circuit trouble
	Check and remedy	To avoid deletion of the counter data/adjustment data, use the simulation to save the counter/adjustment values. (If there is a printer option, execute SIM22-1 to save the counter data and the adjustment values.) Replace the PCU PWB.

U6-00 Desk communication trouble

Trouble content		Desk communication error, communication line test error after turning on the power or canceling the exclusive simulation
Section		PCU
Case 1	Cause	Connector and harness connection trouble or disconnection, desk control PWB trouble, control PWB (PCU) trouble, malfunction due to electrical noises
	Check and remedy	Cancel the trouble by turning OFF/ON. Check the connector and the harness of the communication line.

U6-01 Tray 1 lift-up trouble

Trouble content		DLUD1 does not turn ON within the specified time.
Section		PCU
Case 1	Cause	DLUD1 sensor trouble, tray 1 lift-up motor trouble, desk PWB, lift-up unit, paper feed unit harness connection trouble
	Check and remedy	Check DLUD1 and its harness and connector. Check the lift-up unit.

U6-02 Tray 2 lift-up trouble

Trouble content		DLUD2 does not turn ON within the specified time.
Section		PCU
Case 1	Cause	DLUD2 sensor trouble, tray 2 lift-up motor trouble, desk PWB, lift-up unit, paper feed unit harness connection trouble
	Check and remedy	Check DLUD2 and its harness and connector. Check the lift-up unit.

U6-09 LCC lift motor trouble

Trouble content		• The encoder input value is not changed in 0.13sec (1st time)/0.5sec (2nd time and later) after rotation of the motor. • The motor is rotated for 18sec or more. • The encoder is changed after passing a certain time from stopping the motor. (2sec, 10 count or more)
Section		PCU
Case 1	Cause	Sensor trouble, LCC control PWB trouble, gear breakage, lift motor trouble
	Check and remedy	Use SIM4-2 and 4-3 to check the operation of the sensor and the lift motor. Use SIM15 to cancel the trouble.

U6-10 Desk transport motor trouble

Trouble content		Desk transport motor operation trouble
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, overcurent to the motor, console finisher control PWB trouble
	Check and remedy	Use SIM 4-3 to check the operation of the desk transport motor.

U6-20 LCC communication trouble

Trouble content		LCC communication error. Communication line test error after turning ON the power or canceling the exclusive simulation. LCC and machine model codes discrepancy error
Section		PCU
Case 1	Cause	Connector and harness connection trouble or disconnection, LCC control PWB trouble, control PWB (PCU) trouble, malfunction due to electrical noises
	Check and remedy	Turn OFF/ON the power to cancel the trouble. Check the connector and the harness of the communication line.

U6-21 LCC transport motor trouble

Trouble content		• The encoder input value is not changed in 0.06sec after turning on the motor. • The encoder input value is changed after a certain time from turning OFF the motor. (After 5sec, count is made for 0.1sec to get 100 or more count.)
Section		PCU
Case 1	Cause	Motor lock, motor RPM abnormality, an overcurrent to the motor, LCC control PWB trouble
	Check and remedy	Use SIM4-3 to check the operation of the transport motor.

U6-22 LCC 24V power abnormality

Trouble content		DC24V power is not supplied to LCC.
Section		PCU
Case 1	Cause	Connector and harness connection trouble or disconnection, LCC control PWB trouble, power unit trouble
	Check and remedy	Check the connector and the harness of the power line. Check that the power unit and the LCC control PWB is of 24V.

U6-50 Desk incompatibility trouble

Trouble content		Detection of desk connection incompatible with the MX-2300/2700 **
Section		PCU
Case 1	Cause	Connection of a desk which is incompatible with the MX-2300/2700 ** is detected.
	Check and remedy	Connect the MX-DEX1/DEX2.

U6-51 LCC incompatibility trouble

Trouble content		Detection of LCC connection which is incompatible with the MX-2300/2700 **.
Section		PCU
Case 1	Cause	Connection of the LCC, which is incompatible with the MX-2300/2700 ** is detected.
	Check and remedy	Connect the MX-LCX1.

UC-02 CPT-ASIC abnormality

Trouble content		CPT-ASIC access error (When the ASIC does not operate normally.)
Section		Scanner
Case 1	Cause	CPT-ASIC abnormality, SCU PWB abnormality
	Check and remedy	Turn OFF/ON the power several times. If the trouble still occurs, replace the SCU PWB or the CPT-ASIC.

UC-20 Document control module trouble

Trouble content		Communication error between SCU and DOCC Communication line test error when turning on the power or after canceling an exclusion simulation.
Section		Scanner
Case 1	Cause	Connector or harness connection error or disconnection
	Check and remedy	Check the connector and harness in the communication line.
Case 2	Cause	Control PWB (SCU) trouble, DOCC PWB trouble.
	Check and remedy	Replace the SCU PWB or the DOCC PWB.
Case 3	Cause	Malfunction due to electrical noises.
	Check and remedy	Turn OFF/ON the power to electrical cancel the trouble.

[9] MAINTENANCE

1. Maintenance system table

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

Unit name	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
		Color supply			60 K		120 K		180 K		240 K		300 K		360 K	
Drum peripheral	Drum (BK)	Monochrome supply		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	Cleaner blade (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-14)
	Charging unit (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-2)
	Drum (C)	Color supply			▲		▲		▲		▲		▲		▲	
	Cleaner blade (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [24]-14)
	Charging unit (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [24]-2)
	Side seal F/R (BK)	Mechanical parts		×	×	×	×	×	×	×	×	×	×	×	×	
	Toner reception seal (BK)		×	×	×	×	×	×	×	×	×	×	×	×	×	
	Side seal F/R(C)				×		×		×		×		×		×	
	Toner reception seal (C)		×		×		×		×		×		×		×	
	Waste toner box		×	×	×	×	×	×	×	×	×	×	×	×	×	
Developing section	Developer (BK)	Monochrome supply		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
	DV seal (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-42)
	DV side seal F (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-26)
	DV side seal R (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-15)
	Toner filter			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-37)
	Developer (C)	Color supply			▲		▲		▲		▲		▲		▲	
	Developer (M)				▲		▲		▲		▲		▲		▲	
	Developer (Y)				▲		▲		▲		▲		▲		▲	
	DV seal (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [23]-42)
	DV side seal F/R (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [23]-26, [23]-15)
	Toner filter				▲		▲		▲		▲		▲		▲	(P/G No.: [22]-37)
	Toner cartridge (BK/ C/M/Y)	Monochrome/ Color supply	User replacement for every toner empty (or the specified traveling distance).													
	Bias pin/Connector	Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	×	

Unit name	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
LSU	Dust proof glass	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Cleaning base		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-35)
Transfer section	Intermediate transfer belt	Mechanical parts	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [26]-3)
	Primary transfer roller		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [27]-9) (P/G No.: [28]-27)
	Intermediate transfer blade		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [25]-19)
	Belt drive gear		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [27]-13)
	Primary transfer conduction collar		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [27]-8) (P/G No.: [28]-25)
	Transfer drive roller			○	○	○	○	○	○	○	○	○	○	○	○	
	Transfer follower roller			○	○	○	○	○	○	○	○	○	○	○	○	
	Tension roller			○	○	○	○	○	○	○	○	○	○	○	○	
	Belt CL brush			×	×	×	×	×	×	×	×	×	×	×	×	
	Y auxiliary roller			○	○	○	○	○	○	○	○	○	○	○	○	
	Resist backup roller			×	×	×	×	×	×	×	×	×	×	×	×	
	Secondary transfer belt		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [30]-21)
	Secondary transfer roller		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [30]-6)
	Secondary belt drive roller			×	×	○	×	×	○	×	×	○	×	×	○	
	Secondary belt tension roller			×	×	○	×	×	○	×	×	○	×	×	○	

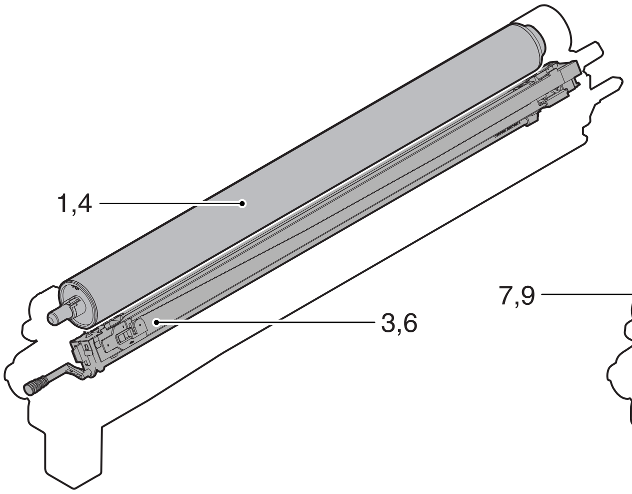
Unit name	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
Transfer section	Secondary belt follower roller	Mechanical parts		×	×	○	×	×	○	×	×	○	×	×	○	
	Secondary transfer idle gear		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [29]-6)
	Sensors (Process control resist sensors)		×	○	○	○	○	○	○	○	○	○	○	○	○	
	Primary CL roller			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [26]-56)
	Cleaner seal		×	×	×	×	×	×	×	×	×	×	×	×	×	
	Cleaner seal R		×	×	×	×	×	×	×	×	×	×	×	×	×	
	Transfer toner reception seal		×	×	×	×	×	×	×	×	×	×	×	×	×	
Fusing section	Upper heat roller	Mechanical parts	×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-32)
	Lower heat roller		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-15)
	Upper heat roller gear		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-30)
	Upper roller bearing		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-31)
	Lower roller bearing		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-14)
	Upper separation pawl		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-11)
	Upper thermistor		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-18)
	Lower thermistor		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-20)
	Non-contact thermistor		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	
	Gears		×	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Specified position
	Paper guides		○	○	○	○	○	○	○	○	○	○	○	○	○	
	Fusing unit		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [31]-901) (P/G No.: [32]-901) (P/G No.: [33]-901)
Filters	Ozone filter PA	Mechanical parts	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-40)
Paper feed section	Pickup roller	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [11]-40, [16]-33)
	Paper feed roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [11]-41, [16]-29)
	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [10]-4, [15]-37)
	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	×	
Transport section/ Paper exit reverse section	PS follower roller	Mechanical parts	×	○	○	○	○	○	○	○	○	○	○	○	○	
	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	○	
	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	×	
	Gears		×	×	×	×	×	×	×	×	×	×	×	×	×	When checking, apply to the necessary positions (specified positions).
Drive section	Gears (Grease)	Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	×	HANARL FL955R/ FLOIL G313S When checking, apply to the necessary positions (specified positions).
	Shaft earth sections (Conduction grease)		×	×	×	×	×	×	×	×	×	×	×	×	×	When checking, apply to the necessary positions (specified positions).
	Belts		×	×	×	×	×	×	×	×	×	×	×	×	×	
Others	Sensors	Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	×	
Image quality		Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	×	
Optical section	Mirror/Lens/ Reflector/CCD	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	○	
	Table glass/ SPF glass		○	○	○	○	○	○	○	○	○	○	○	○	○	
	Scanner lamp		○	○	○	○	○	○	○	○	○	○	○	○	○	
	Rails		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Specified positions
	Drive belt/ Drive wire		×	×	×	×	×	×	×	×	×	×	×	×	×	

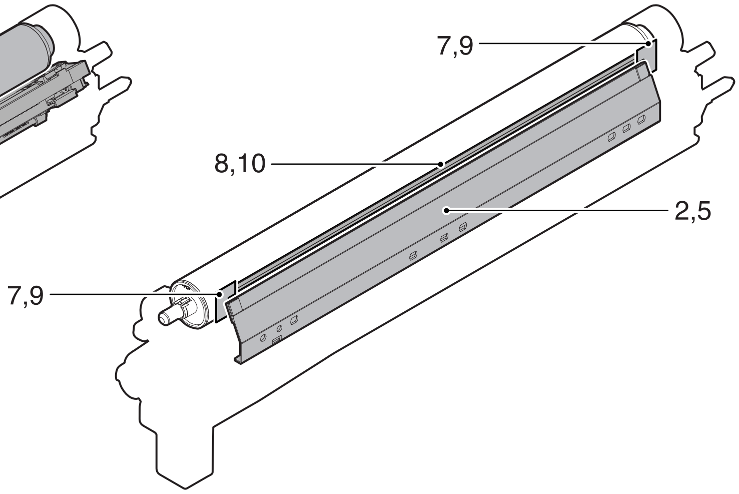
2. Details of maintenance

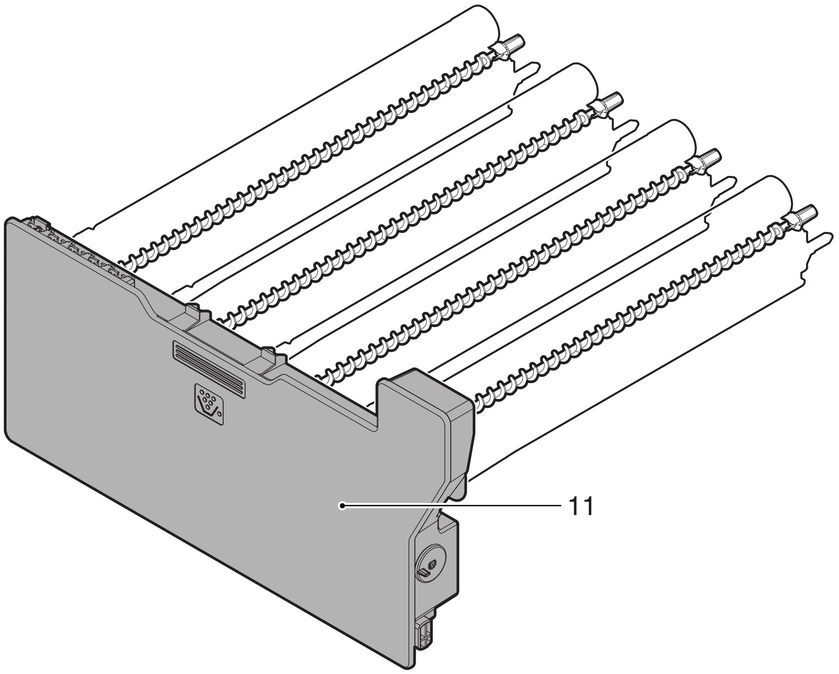
A. Drum peripheral

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
		Color supply			60 K		120 K		180 K		240 K		300 K		360 K	
1	Drum (BK)	Monochrome supply		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
2	Cleaner blade (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-14)
3	Charging unit (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-2)
4	Drum (C)	Color supply			▲		▲		▲		▲		▲		▲	
5	Cleaner blade (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [24]-14)
6	Charging unit (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [24]-2)
7	Side seal F/R (BK)	Mechanical parts		×	×	×	×	×	×	×	×	×	×	×	×	
8	Toner reception seal (BK)		×	×	×	×	×	×	×	×	×	×	×	×	×	
9	Side seal F/R(C)				×		×		×		×		×		×	
10	Toner reception seal (C)		×		×		×		×		×		×		×	
11	Waste toner box		×	×	×	×	×	×	×	×	×	×	×	×	×	







The PM cycle means the replacement timing of periodic replacement consumable parts which are required for maintaining the performance.

The PM cycle is specified only for B/W output. For color output, it is used as a reference value.

[Reason] Since the ratio of B/W to color differs depending on the user's operation scene which varies every day, the PM cycle cannot be specified in a certain cycle for color output.

Replacement of a PM item at the recommended life is performed by the dealer's judgment or at PM call or at EM call.

Life end definition of a drum

When the drum counter exceeds the specified level of 100% black output or 100% full color output, it is judged as life end.

However in practice, the number of rotations specifies quality assurance policy of the tandem engine, where its wear cannot be solely defined by the number of sheets but other operating conditions including increased slip rotations depending on the ratio of B/W to color and/or B/W printing in the color mode using the ACS. The guaranteed number of rotations for the MX-2300/2700 series drum is 715K.

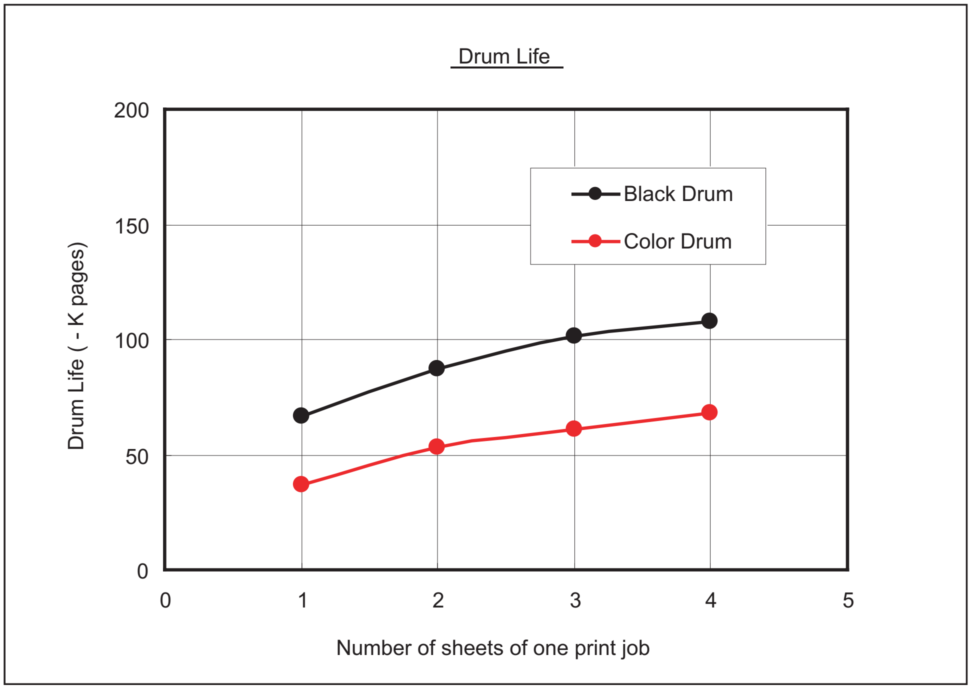
The drum life is affected by the number of sheets of one print job. This is because the actual life is determined by rotations of the drum. If the number of sheets of one print job is less than 3 sheets, the number of rotations for page is increased. As shown in the figure below, therefore, the number of sheets of drum life varies depending on the number of sheets of one print job.

As a reference of the drum life, "Life meter" can be checked with SIM22-1 from the accumulated number of rotations of each drum. "Life meter" indicates the remained life (%) of the drum with the entire drum life as 100%.

(Example) If the used number of rotations is 550K:
100(%) - 550 (K rotations) / 715 (K rotations) x 100 = 030 (%)

	Drum counter		**Number of rotations of drum**	
	B/W	**Full color**	**B/W**	**Full color**
Drum	100K	60K	715K rotations	715K rotations

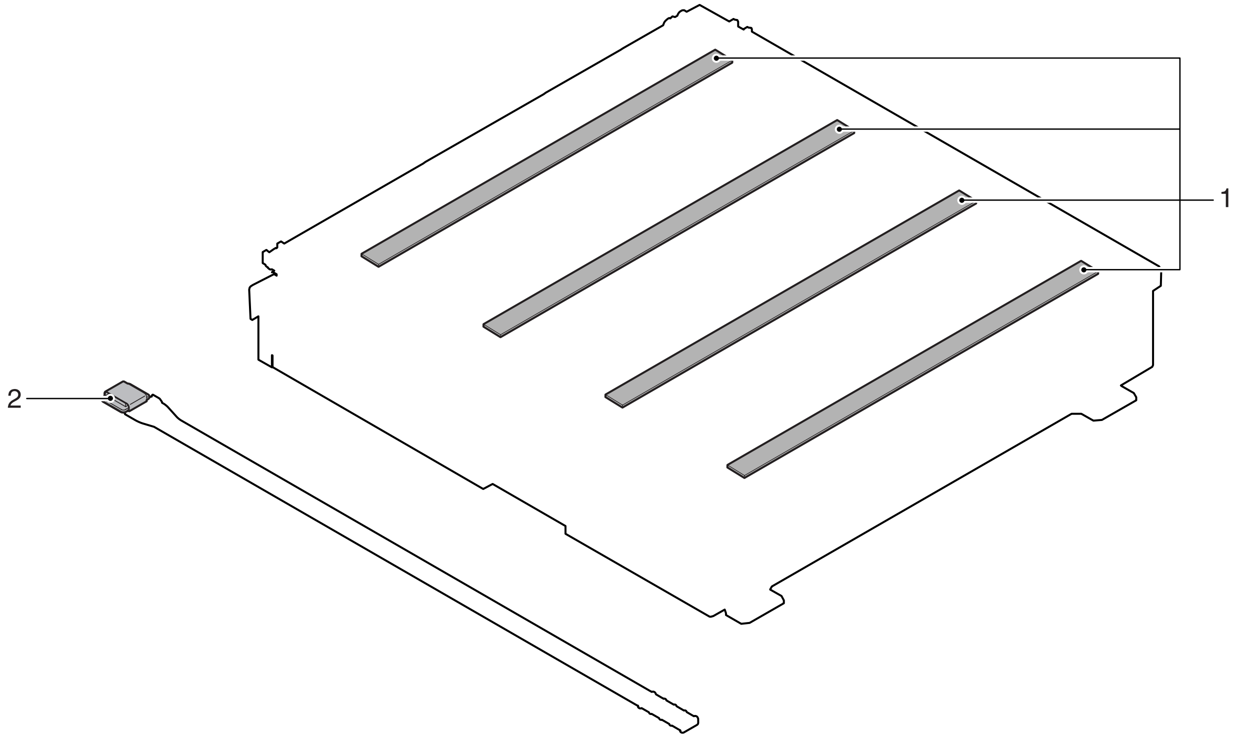
* For 100% full color output by the user, the life of the black drum is 60K similarly to the life of the color drums.



B. LSU

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

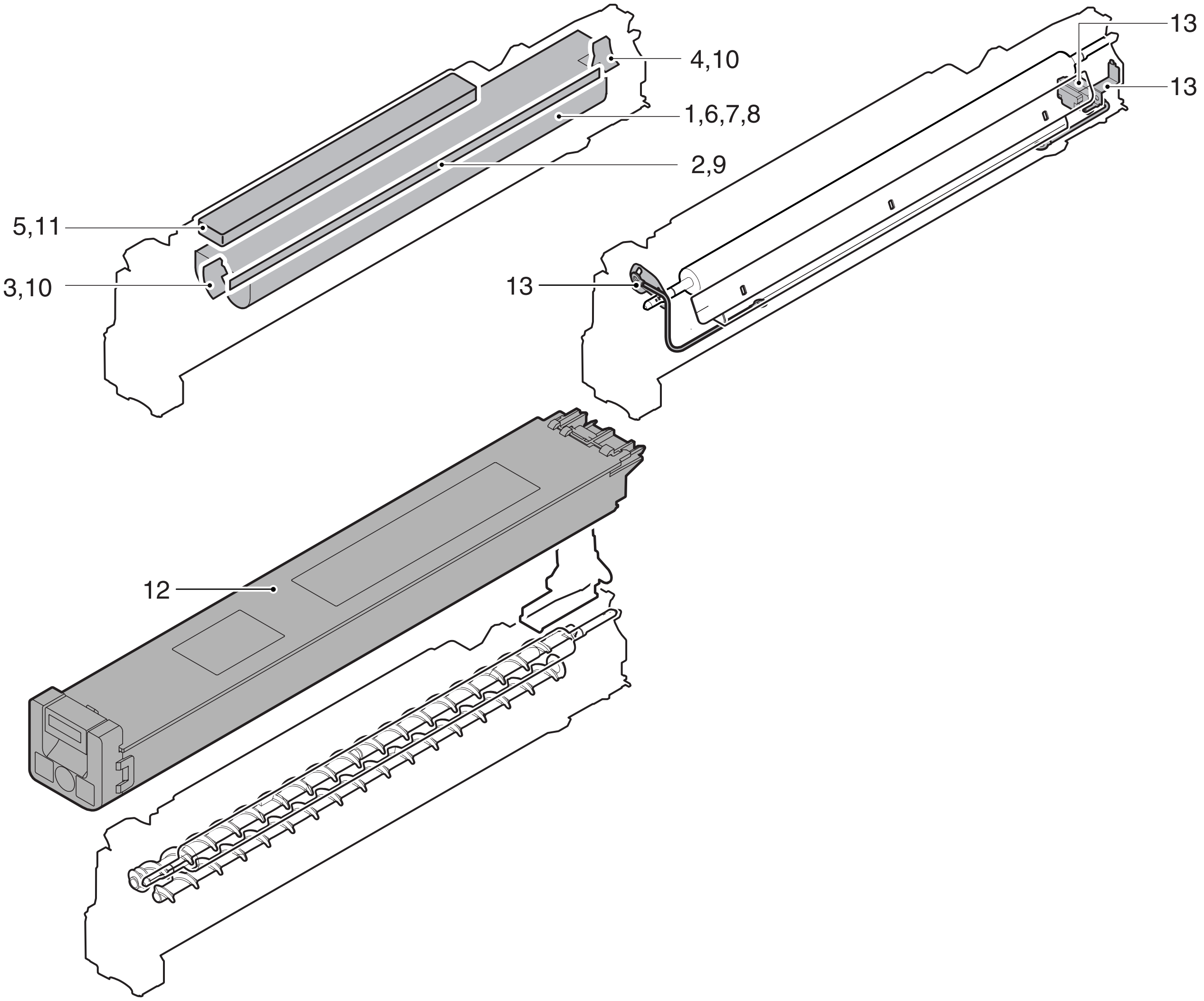
No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Dust proof glass	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	○	
2	Cleaning base		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-35)



C. Developing section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

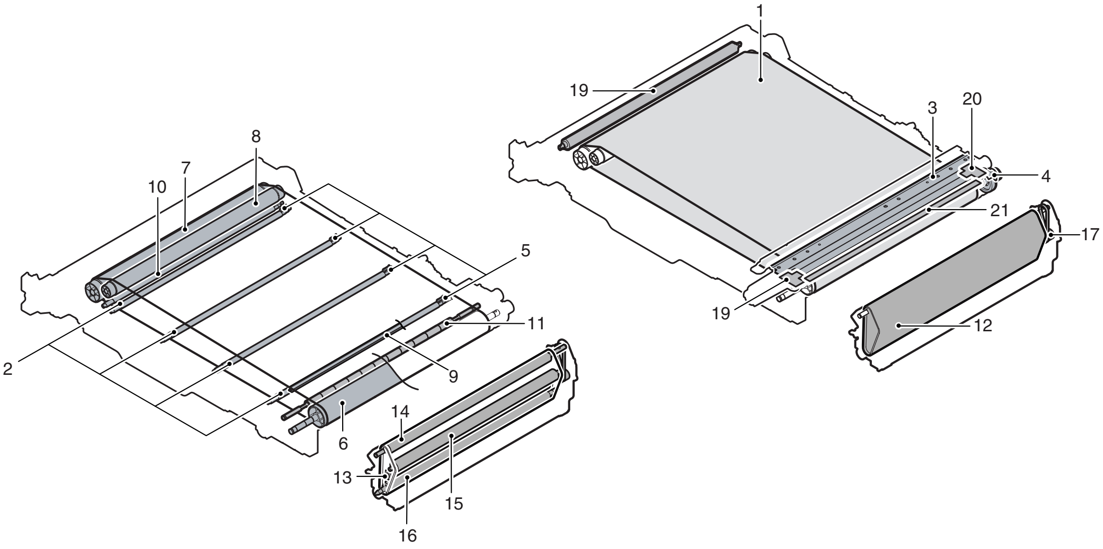
No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
		Color supply			60 K		120 K		180 K		240 K		300 K		360 K	
1	Developer (BK)	Monochrome supply		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
2	DV seal (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-42)
3	DV side seal F (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-26)
4	DV side seal R (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-15)
5	Toner filter			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-37)
6	Developer (C)	Color supply			▲		▲		▲		▲		▲		▲	
7	Developer (M)				▲		▲		▲		▲		▲		▲	
8	Developer (Y)				▲		▲		▲		▲		▲		▲	
9	DV seal (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [23]-42)
10	DV side seal F/R (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [23]-26, [23]-15)
11	Toner filter				▲		▲		▲		▲		▲		▲	(P/G No.: [22]-37)
12	Toner cartridge (BK/C/M/Y)	Monochrome/ Color supply	User replacement for every toner empty (or the specified traveling distance).													
13	Bias pin/ Connector	Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	×	

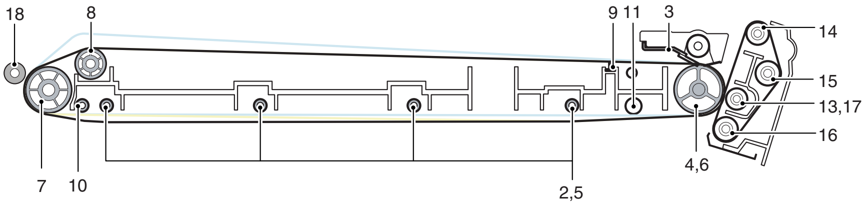


D. Transfer section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Intermediate transfer belt	Mechanical parts	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [26]-3)
2	Primary transfer roller		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [27]-9) (P/G No.: [28]-27)
3	Intermediate transfer blade		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [25]-19)
4	Belt drive gear		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [27]-13)
5	Primary transfer conduction collar		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [27]-8) (P/G No.: [28]-25)
6	Transfer drive roller			○	○	○	○	○	○	○	○	○	○	○	○	
7	Transfer follower roller			○	○	○	○	○	○	○	○	○	○	○	○	
8	Tension roller			○	○	○	○	○	○	○	○	○	○	○	○	
9	Belt CL brush			×	×	×	×	×	×	×	×	×	×	×	×	
10	Y auxiliary roller			○	○	○	○	○	○	○	○	○	○	○	○	
11	Resist backup roller			×	×	×	×	×	×	×	×	×	×	×	×	
12	Secondary transfer belt		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [30]-21)
13	Secondary transfer roller		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [30]-6)
14	Secondary belt drive roller			×	×	○	×	×	○	×	×	○	×	×	○	
15	Secondary belt tension roller			×	×	○	×	×	○	×	×	○	×	×	○	
16	Secondary belt follower roller			×	×	○	×	×	○	×	×	○	×	×	○	
17	Secondary transfer idle gear		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [29]-6)
18	Sensors (Process control resist sensors)		×	○	○	○	○	○	○	○	○	○	○	○	○	
19	Primary CL roller			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [26]-56)
20	Cleaner seal		×	×	×	×	×	×	×	×	×	×	×	×	×	
21	Cleaner seal R		×	×	×	×	×	×	×	×	×	×	×	×	×	
22	Transfer toner reception seal		×	×	×	×	×	×	×	×	×	×	×	×	×	

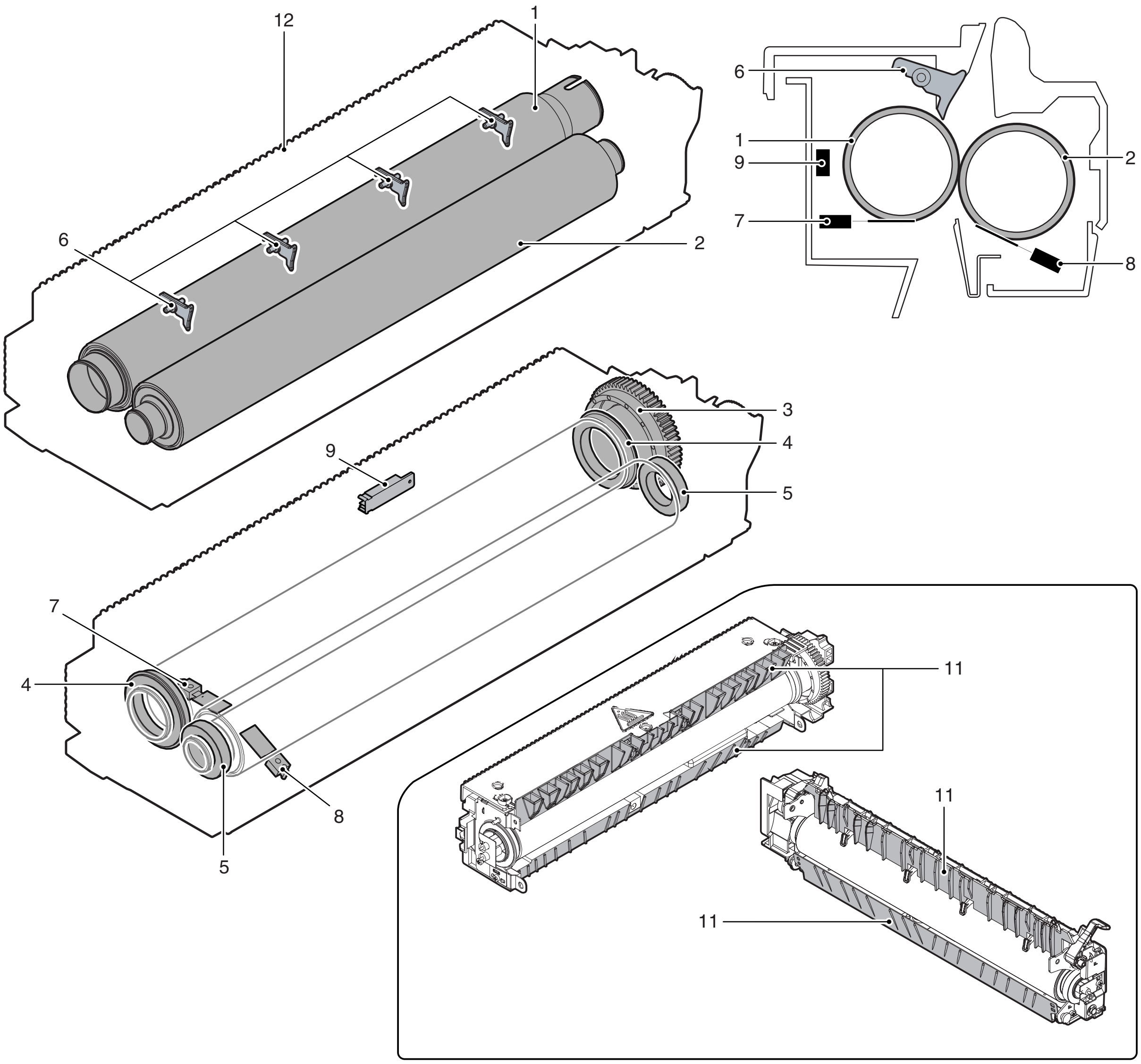




E. Fusing section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

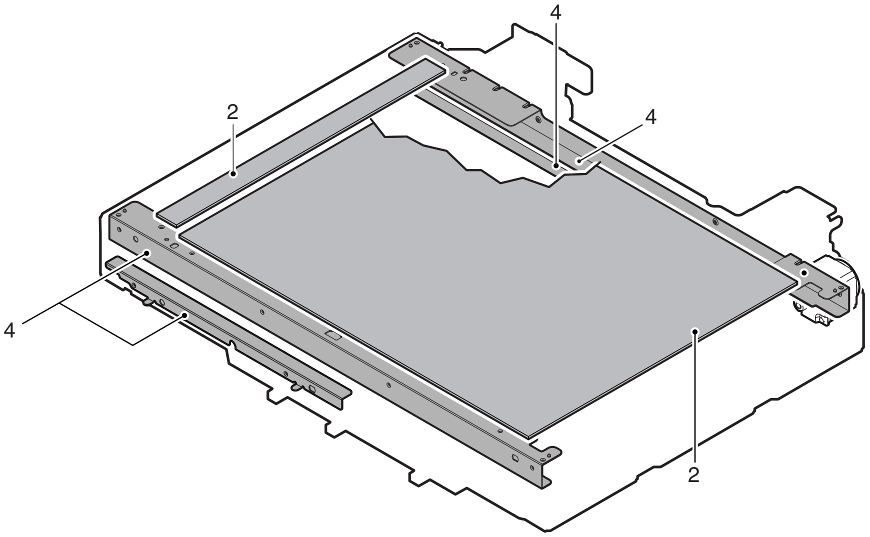
No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Upper heat roller	Mechanical parts	×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-32)
2	Lower heat roller		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-15)
3	Upper heat roller gear		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-30)
4	Upper roller bearing		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-31)
5	Lower roller bearing		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-14)
6	Upper separation pawl		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-11)
7	Upper thermistor		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-18)
8	Lower thermistor		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-20)
9	Non-contact thermistor		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	
10	Gears		×	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Specified position
11	Paper guides		○	○	○	○	○	○	○	○	○	○	○	○	○	
12	Fusing unit		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [31]-901) (P/G No.: [32]-901) (P/G No.: [33]-901)

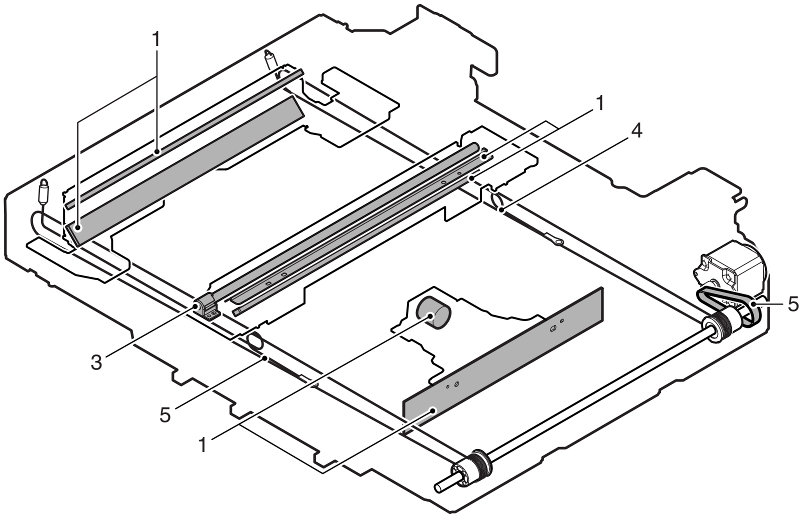


F. Optical section

✕: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Mirror/Lens/ Reflector/CCD	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	○	
2	Table glass/ SPF glass		○	○	○	○	○	○	○	○	○	○	○	○	○	
3	Scanner lamp		○	○	○	○	○	○	○	○	○	○	○	○	○	
4	Rails		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Specified positions
5	Drive belt/ Drive wire		✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	

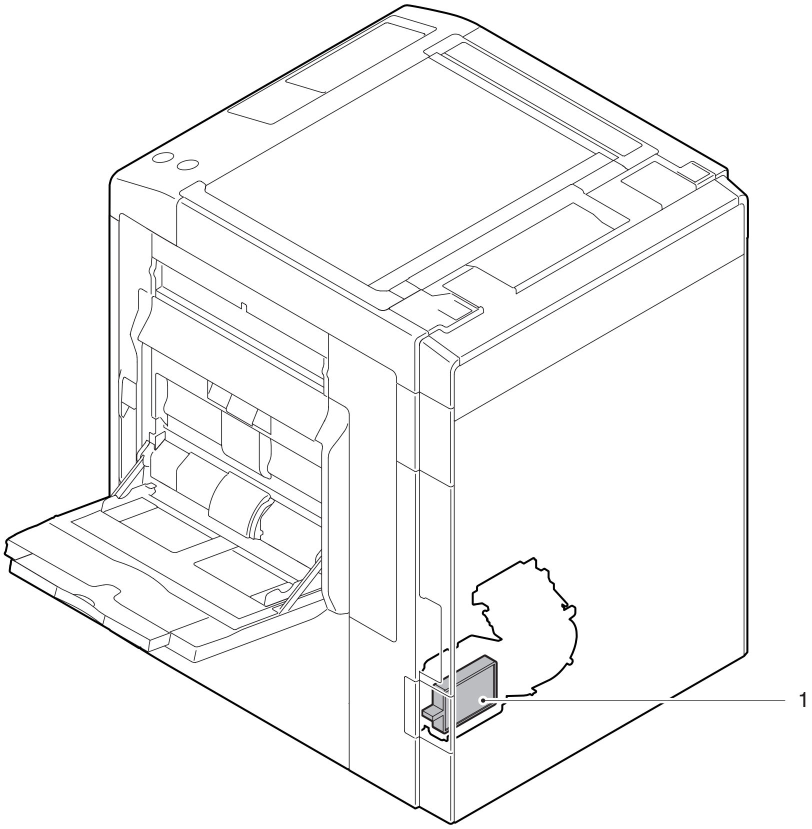




G. Filters

✕: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

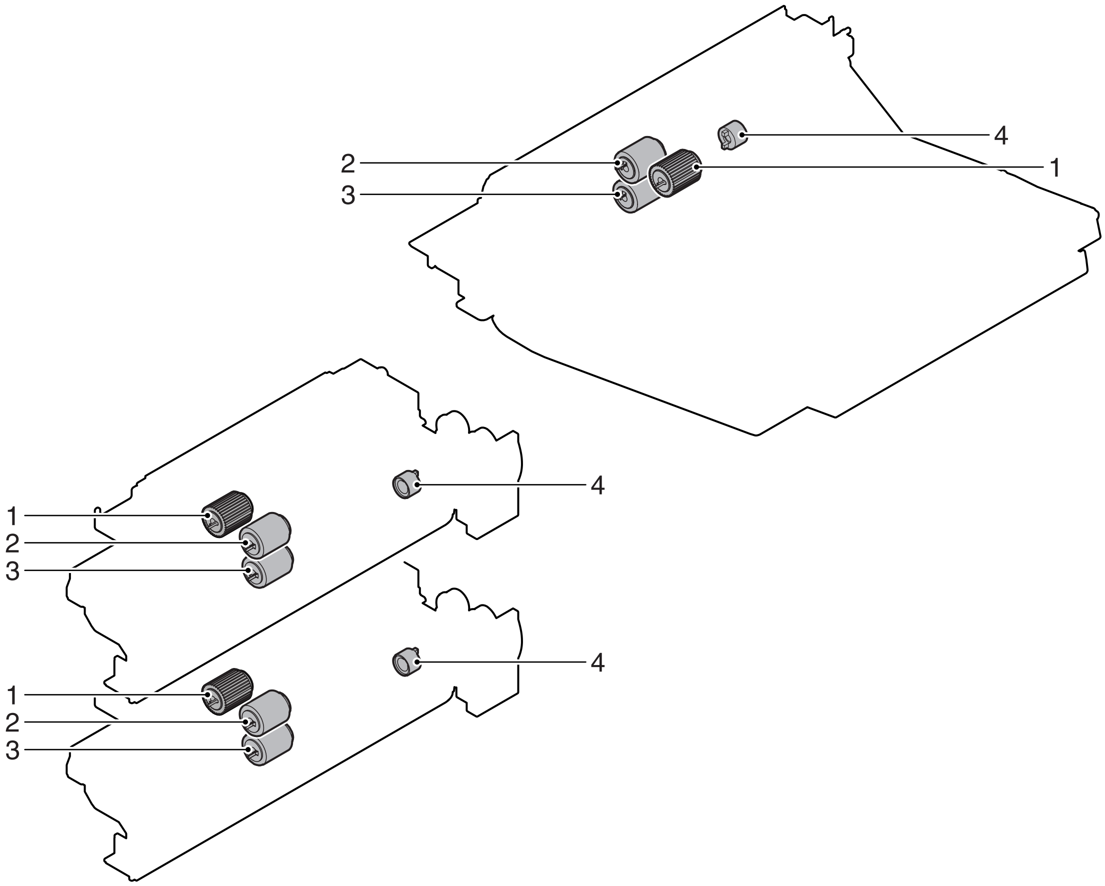
No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Ozone filter PA	Mechanical parts	✕	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-40)



H. Paper feed section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shift the position.

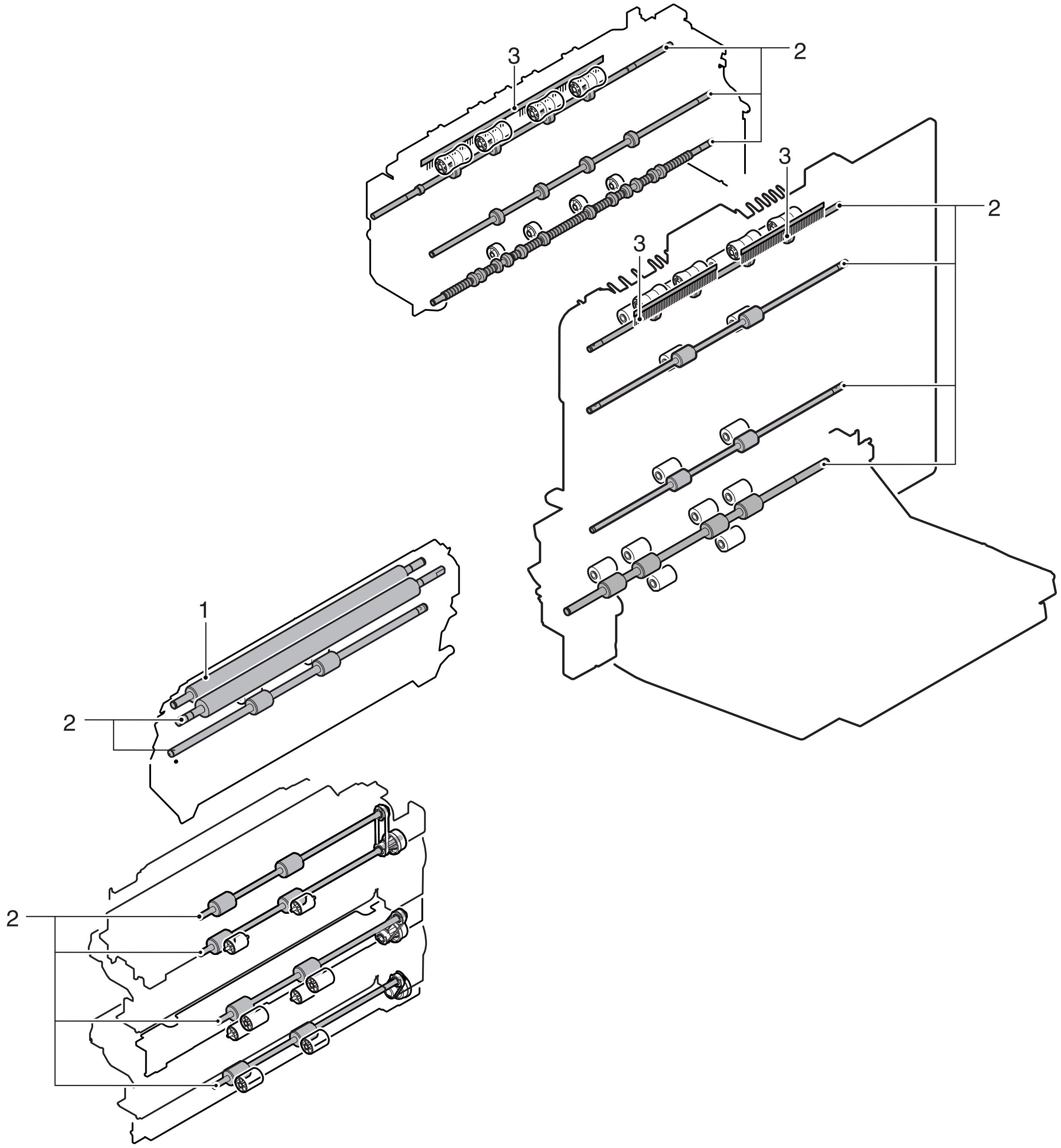
No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Pickup roller	Mechanical parts	○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [11]-40, [16]-33)
2	Paper feed roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [11]-41, [16]-29)
3	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [10]-4, [15]-37)
4	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	×	



I. Transport section/Paper exit reverse section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position.

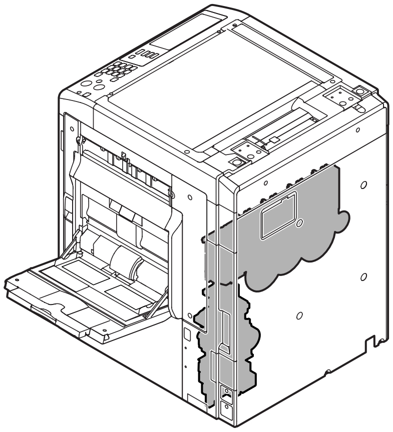
No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	PS follower roller	Mechanical parts	×	○	○	○	○	○	○	○	○	○	○	○	○	
2	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	○	
3	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	×	
4	Gears		×	×	×	×	×	×	×	×	×	×	×	×	×	When checking, apply to the necessary positions (specified positions).

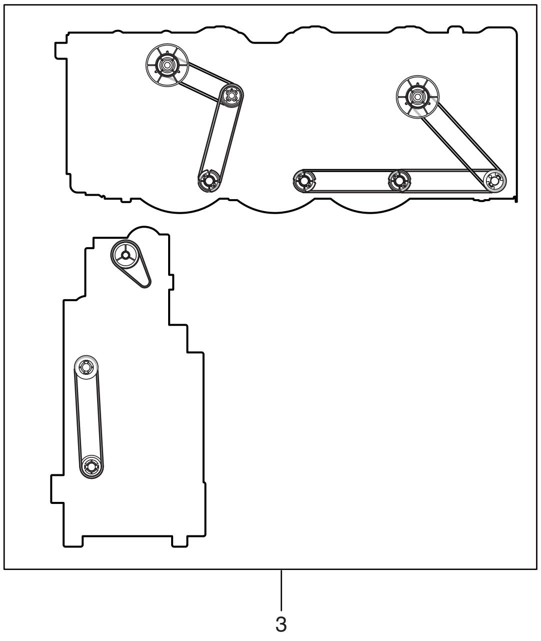


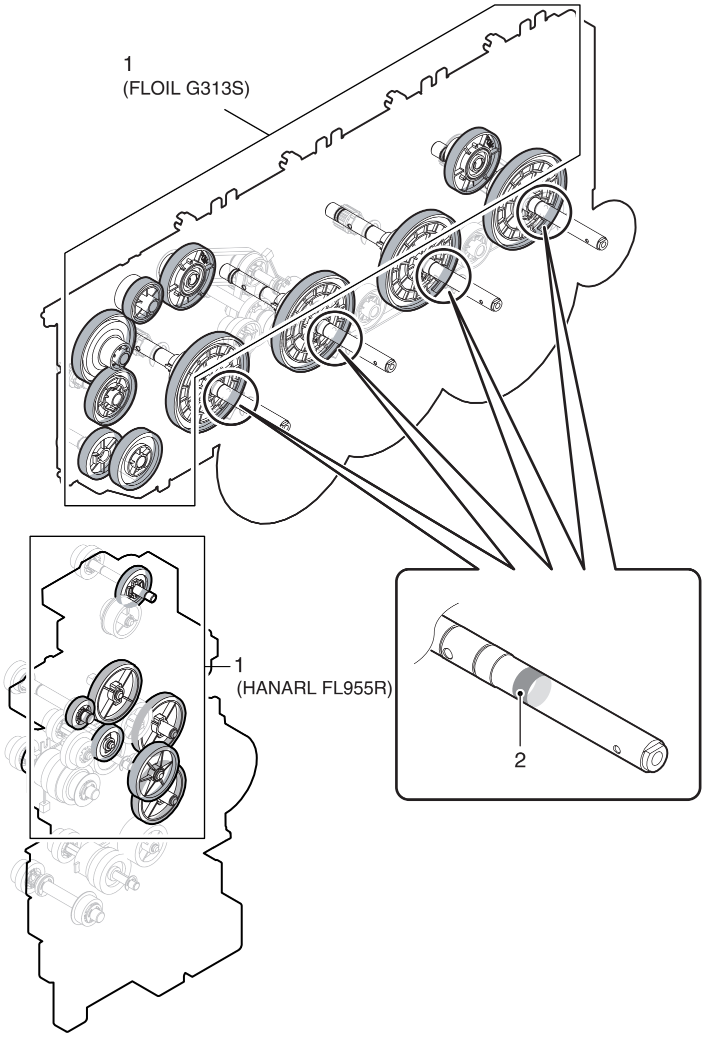
J. Drive section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift the position.

No.	Part name	Monochrome supply/ Mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Gears (Grease)	Mechanical parts	×	×	×	×	×	×	×	×	×	×	×	×	HANARL FL955R/FLOIL G313S When checking, apply to the necessary positions (specified positions).
2	Shaft earth sections (Conduction grease)		×	×	×	×	×	×	×	×	×	×	×	×	When checking, apply to the necessary positions (specified positions).
3	Belts		×	×	×	×	×	×	×	×	×	×	×	×	







3. Other related items

A. Maintenance timing display

The message of maintenance execution timing is displayed when each counter reaches the set value. The relationship between the messages and the counters is shown blow.

(1) (Maintenance timing) (Frameless)

a. Maintenance counters

Code	Content	Print job Enable/Disable
TA	The maintenance counters (total) reaches 90% of the set value of SIM21-1, or they reaches the set value of SIM21-1 but SIM26-38 is set to Print Enable.	Enable
CA	The maintenance counters (color) reaches 90% of the set value of SIM21-1, or they reaches the set value of SIM21-1 but SIM26-38 is set to Print Enable.	Enable
AA	The maintenance counters (both of total and color) reaches 90% of the set value of SIM21-1, or they reaches the set value of SIM21-1 but SIM26-38 is set to Print Enable.	Enable

- After completion of the maintenance, execute SIM 24-4 (Maintenance counters (total, color) clear).

b. Transfer unit system counters

Code	Content	Print job Enable/Disable
TK1	The primary transfer unit print counter reaches 100,000 sheets.	Enable
TK2	The secondary transfer unit print counter reaches 300,000 sheets.	Enable

- After completion of the maintenance, execute SIM 24-4 (Primary and secondary transfer unit counters (number of the transfer unit print counter, accumulated traveling distance of the transfer unit, days of use of the transfer unit) clear).

c. Fusing unit counter

Code	Content	Print job Enable/Disable
FK1	The funsing unit print counter reaches 200,000 sheets.	Enable

- After completion of the maintenance, execute SIM 24-4 (Fusing unit counters (number of the fusing unit print counter, days of use of the fusing unit) clear).

d. Drum cartridge system counters

Code	Content	Print job Enable/Disable
DK	The drum cartridge print counter (K) reaches 100,000 sheets, or the accumulated number of rotations of the drum (K) reaches 715K.	Enable
DC	The drum cartridge print counter (C) reaches 60,000 sheets, or the accumulated number of rotations of the drum (C) reaches 715K.	Enable
DM	The drum cartridge print counter (M) reaches 60,000 sheets, or the accumulated number of rotations of the drum (M) reaches 715K.	Enable
DY	The drum cartridge print counter (Y) reaches 60,000 sheets, or the accumulated number of rotations of the drum (Y) reaches 715K.	Enable

- After completion of the maintenance, execute SIM 24-7 (Drum counters (number of the drum print counter, accumulated traveling distance of the drum) clear).

e. Developer cartridge system counters

Code	Content	Print job Enable/Disable
VK	The developer print counter (K) reaches 100,000 sheets, or the accumulated number of rotations of the developer (K) reaches 715K.	Enable
VC	The developer print counter (C) reaches 60,000 sheets, or the accumulated number of rotations of the developer (C) reaches 715K.	Enable
VM	The developer print counter (M) reaches 60,000 sheets, or the accumulated number of rotations of the developer (M) reaches 715K.	Enable
VY	The developer print counter (Y) reaches 60,000 sheets, or the accumulated number of rotations of the developer (Y) reaches 715K.	Enable

- After completion of the maintenance, execute SIM 24-5 (Developer counters (number of the developer print counter, accumulated traveling distance of the developer) clear).

(2) [Maintenance timing] (Framed)

a. Maintenance counters

Code	Content	Print job Enable/Disable
TA	The maintenance counters (total) reaches the set value of SIM21-1, and SIM26-38 is set to Print Disable.	Disable
CA	The maintenance counters (color) reaches the set value of SIM21-1, and SIM26-38 is set to Print Disable.	Disable
AA	The maintenance counters (both of total and color) reaches the set value of SIM21-1, and SIM26-38 is set to Print Disable.	Disable

- After completion of the maintenance, execute SIM 24-4 (Maintenance counters (total, color) clear).

(3) [Check the waste toner box.] (Framed)

Code	Content	Print job Enable/Disable
—	Waste toner full	Disable

- After detection of the waste toner full, reset the full detection by opening/close of the front door.

[10] ROM VERSION-UP

1. General

A. Cases where version-up is required

ROM version-up is required in the following cases:

1) When there is a necessity to upgrade the performance.
2) When installing a new spare ROM to the machine for repair.
3) When installing a new spare PWB unit with ROM installed to it.
4) When there is a trouble in the programs in ROM and it must be repaired.

B. Notes for version-up

(1) Relationship between each ROM and version-up

Before execution of ROM version-up, check combinations with ROMís installed in the other PWBís including options.

Some combinations of versions may cause malfunctions of the machine.

C. Update procedures and kinds of firmware

There are following methods of downloading of the firmware.

1) Firmware download using USB (for production)
2) Firmware download using media
3) Firmware download using FTP
4) Firmware download using Web page

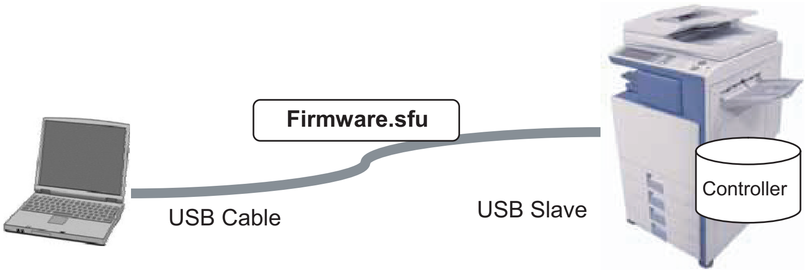
- Firmware types

	Flash ROM	Contents
Machine	ALL	Includes all contents shown below.
	ICU(BOOT)	ANIME
		BOOTSUB
		CONFIG
		ESCP FONT
		GRPH
		LANG
		SPDL
		XIO FONT
		PROFILE
	ICU(MAIN)	MAIN
	IMG-ASIC	IMG DATA ROM
	SCU	SCU(MAIN)
	PCU	PCU(MAIN)
	FAX1	FAX1(MAIN)
	FAX2	FAX2(MAIN)
Option	1K FINISHER	FINISHER_1K(MAIN)
	INNER FINISHER	FINISHER_INNER(MAIN)
	LCC A4	LCC_A4(MAIN)
	DESK	DESK(MAIN)

NOTE: If the MFPcnt PWB DIP SW No. 2 is not set to ON, an error occurs.

2. Version-up procedure

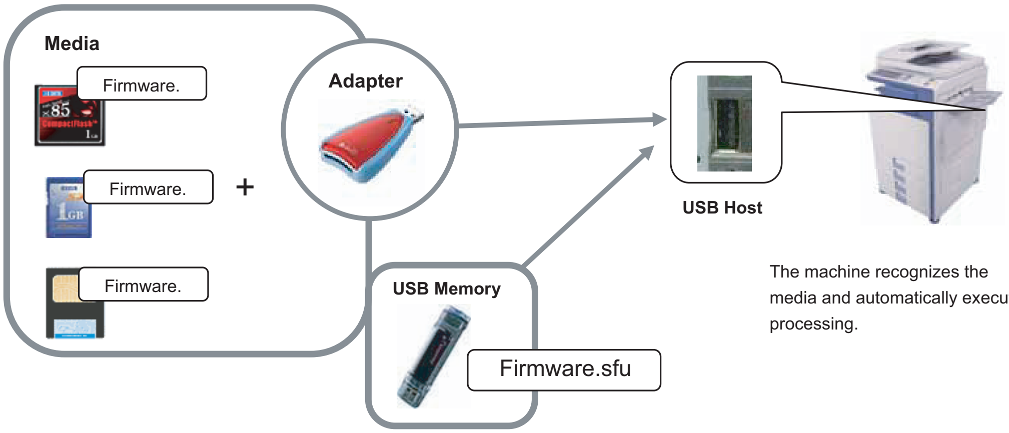
A. Firmware download using USB



The machine is connected to a PC containing the firmware data by USB cable.

MS-DOS is started on the PC and FCOPY is used to transfer all files of the firmware data (extension ".sfu") to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.

B. Firmware download using media



The machine recognizes the media and automatically executes processing.

A USB host is established in the machine, the firmware in a memory card is selected from machine simulation, and the firmware updated.

For emergency use, a BOOT function is provided for start-up from the media.

(1) Firmware update from USB memory device

To update the firmware, use the simulation No.49-01.

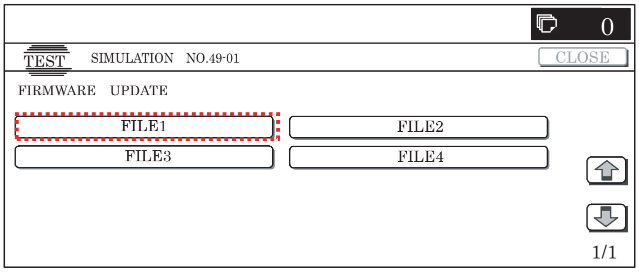
If USB memory device is not inserted when service personnel opens the simulation 49-01 screen, a message “INSERT A STORAGE FIRMWARE STORED ON. [OK]” will be displayed. Press [OK] to open the firmware file. If [OK] key is pressed without inserting USB memory device, screen will not shift and wait for the insertion. Contrary, if USB memory device is pulled out in the File List screen then one of the “File” key is pressed, the machine will detect the error, and shift to the initial screen.

1) Insert the USB memory device into the main unit.

2) Enter the 49-01 screen. Press the button of the file to be updated. The screen transfers to the update screen.

(In this screen, [FILE 1] is selected)

* The number of button changes depending on the number of the file in the USB memory device inserted.



SIMULATION NO.49-01

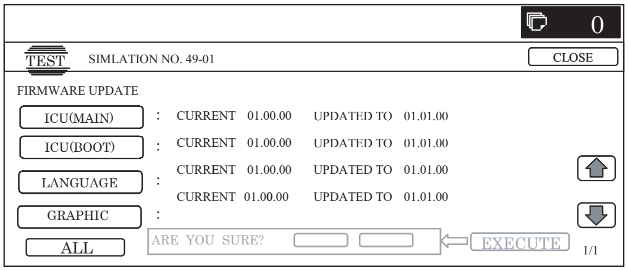
FIRMWARE UPDATE

3) Current version number and the version number to be updated will be shown for each firmware respectively.

Following key-codes will be changed;

NOW → CURRENT

NEXT → UPDATED TO



SIMLATION NO. 49-01

FIRMWARE UPDATE

ICU(MAIN) : CURRENT 01.00.00 UPDATED TO 01.01.00

ICU(BOOT) : CURRENT 01.00.00 UPDATED TO 01.01.00

LANGUAGE : CURRENT 01.00.00 UPDATED TO 01.01.00

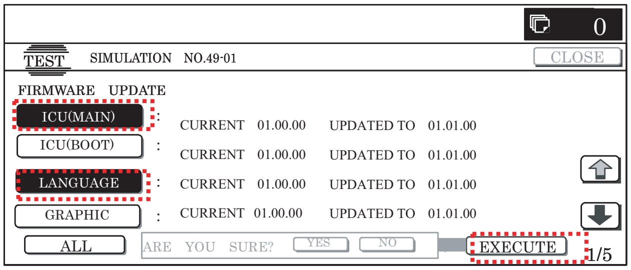
GRAPHIC : CURRENT 01.00.00 UPDATED TO 01.01.00

ARE YOU SURE?

4) Select the button of the firmware to be updated. The button will be highlighted. (In this screen, [ICU(MAIN)] and [LANGUAGE] are selected.) At the same time, [EXECUTE] button appears.

* Press the selected button again to release the selection.

* Press [ALL] button to select all items.



SIMULATION NO.49-01

FIRMWARE UPDATE

ICU(MAIN) : CURRENT 01.00.00 UPDATED TO 01.01.00

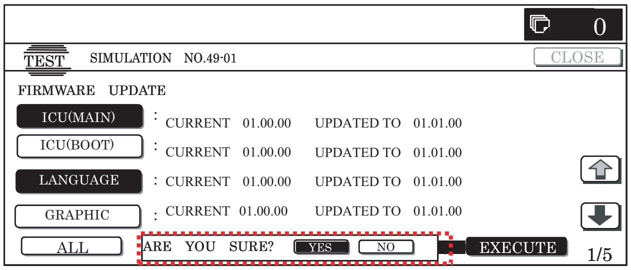
ICU(BOOT) : CURRENT 01.00.00 UPDATED TO 01.01.00

LANGUAGE : CURRENT 01.00.00 UPDATED TO 01.01.00

GRAPHIC : CURRENT 01.00.00 UPDATED TO 01.01.00

ARE YOU SURE?

5) Press [EXECUTE] button. “ARE YOU SURE? [YES] [NO]” becomes clear. If no button is selected, [EXECUTE] button is gray out and cannot be pressed. Press [YES] to start the update.



SIMULATION NO.49-01

FIRMWARE UPDATE

ICU(MAIN) : CURRENT 01.00.00 UPDATED TO 01.01.00

ICU(BOOT) : CURRENT 01.00.00 UPDATED TO 01.01.00

LANGUAGE : CURRENT 01.00.00 UPDATED TO 01.01.00

GRAPHIC : CURRENT 01.00.00 UPDATED TO 01.01.00

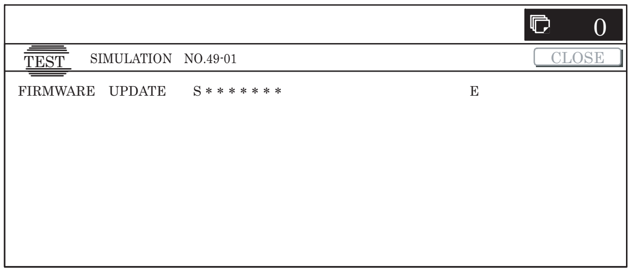
ARE YOU SURE?

Status is shown at the right of “FIRMWARE UPDATE” with 20 stages.

Only progress gauge is shown on the screen.

No button or version number is displayed.

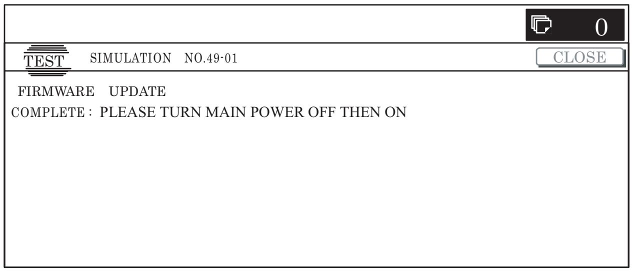
(Because, up and down arrows or arrow at the left of [EXECUTE] button are skewed.)



SIMULATION NO.49-01

FIRMWARE UPDATE S * * * * * * * E

(Normal End)

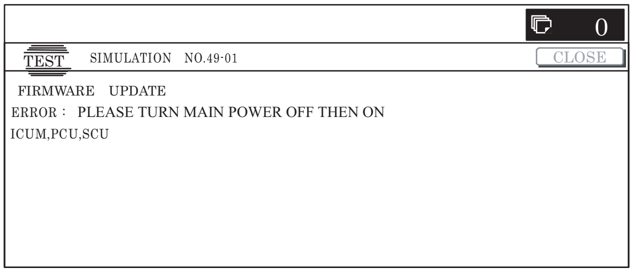


SIMULATION NO.49-01

FIRMWARE UPDATE

COMPLETE : PLEASE TURN MAIN POWER OFF THEN ON

(Error End)



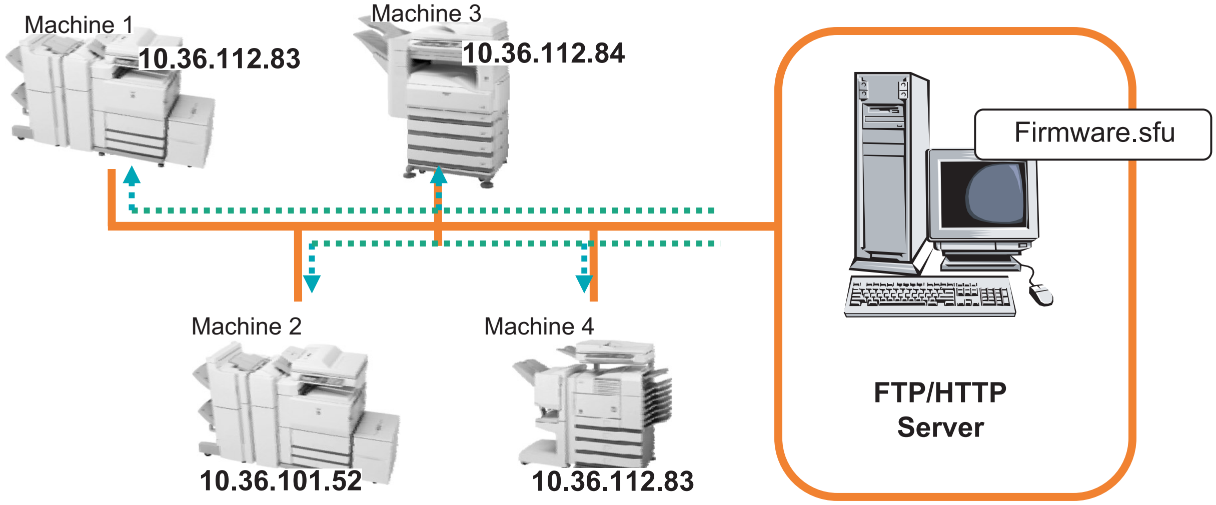
SIMULATION NO.49-01

FIRMWARE UPDATE

ERROR : PLEASE TURN MAIN POWER OFF THEN ON

ICUM,PCU,SCU

C. Firmware download using FTP


Machine 1
10.36.112.83
Machine 3
10.36.112.84
Firmware.sfu
Machine 2
Machine 4
FTP/HTTP Server
10.36.101.52
10.36.112.83

FTP software is used to transfer the firmware data (extension ".sfu") from the PC to the machine. The controller recognizes the firmware identifier and the machine automatically switches to firmware write mode. After the firmware is updated, the machine automatically resets.

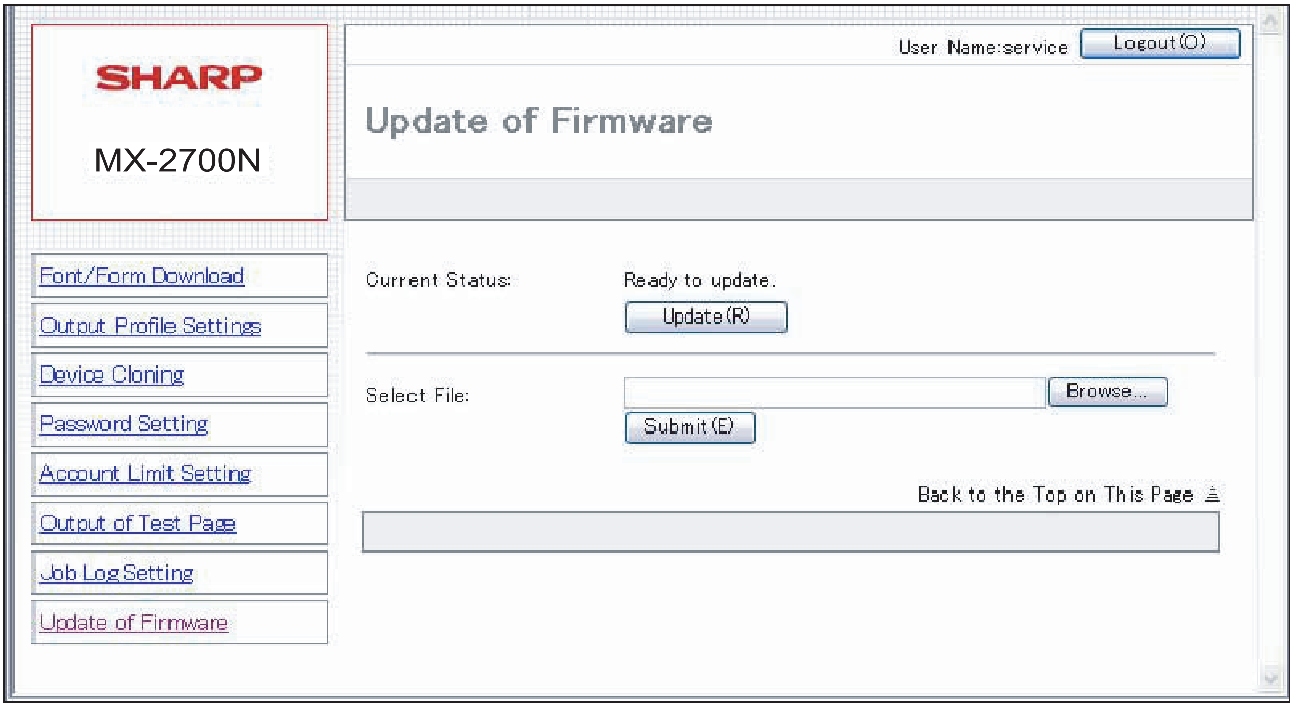
D. Firmware download using the Web page

A Web browser (service technician's Web page) is used to update the firmware.

The general procedure is the same as that for the previous Pegasus models.

Update procedure

1) Start the Web browser on a PC and enter the specified URL. A special firmware upgrade page appears.
2) Click the "Update of Firmware" button in the Web page. Click the "Browse" button and select the firmware for the update.

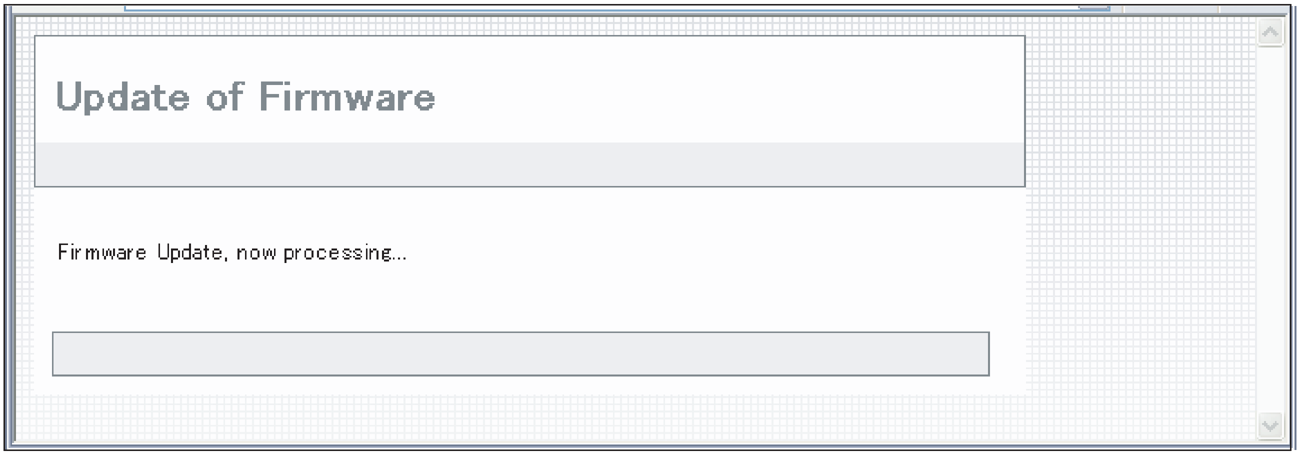

SHARP
MX-2700N
User Name:service
Logout(O)
Update of Firmware
Font/Form Download
Output Profile Settings
Device Cloning
Password Setting
Account Limit Setting
Output of Test Page
Job Log Setting
Update of Firmware
Update(R)
Browse...
Submit(E)
Back to the Top on This Page

Current Status: Ready to update.

Select File:

3) After selecting the file, click the “Submit” button to send the firmware to the Renaissance machine.

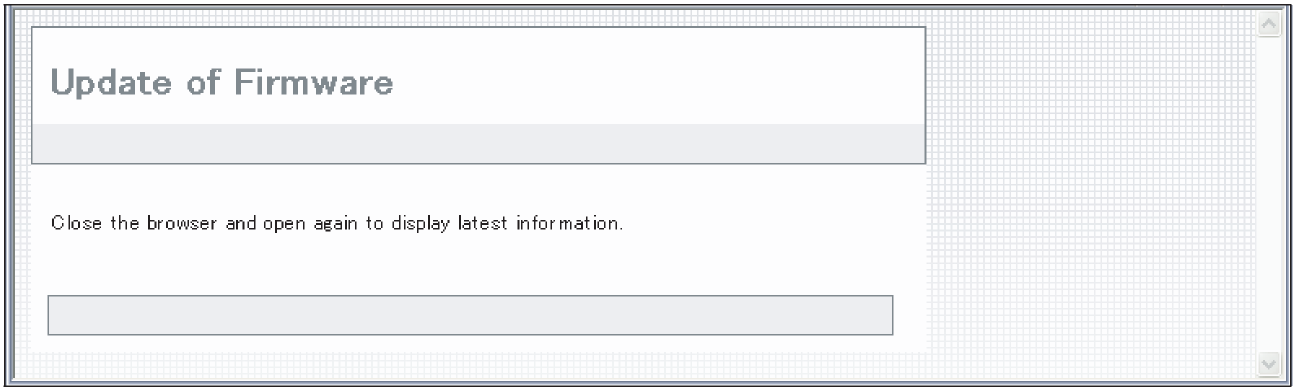
Update processing begins. While processing takes place, “Firmware Update, now processing...” appears.



Update of Firmware

Firmware Update, now processing...

4) When the firmware update is finished, “Firmware Update completed. Please reboot the MFP.” appears. Pressing the [Reboot] key, the machine will restart to complete the update. The browser will shift to the following screen.



Update of Firmware

Close the browser and open again to display latest information.

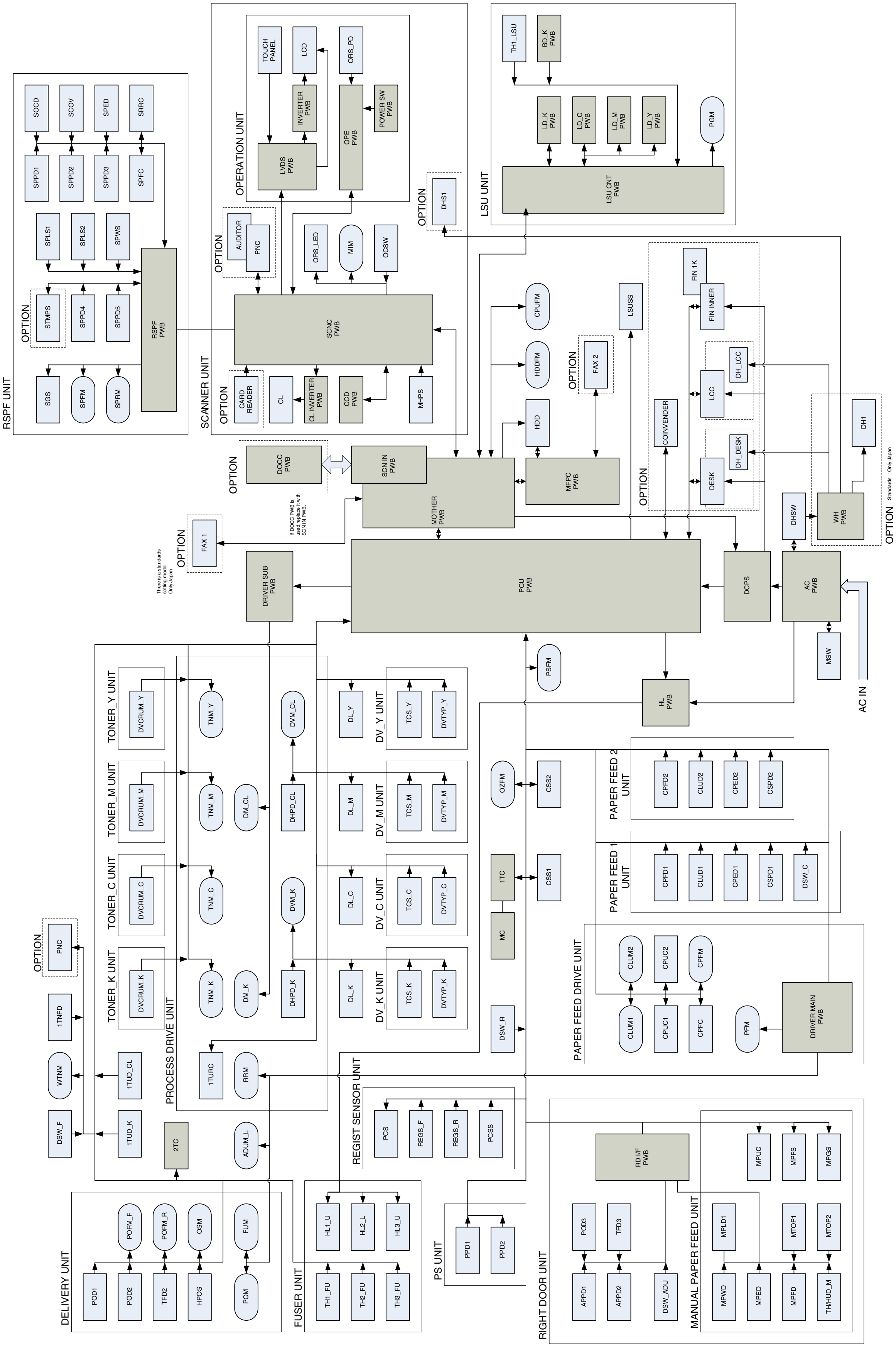
“Close the browser and open again to display latest information.” will be displayed.

5) Update is completed with the above procedures.

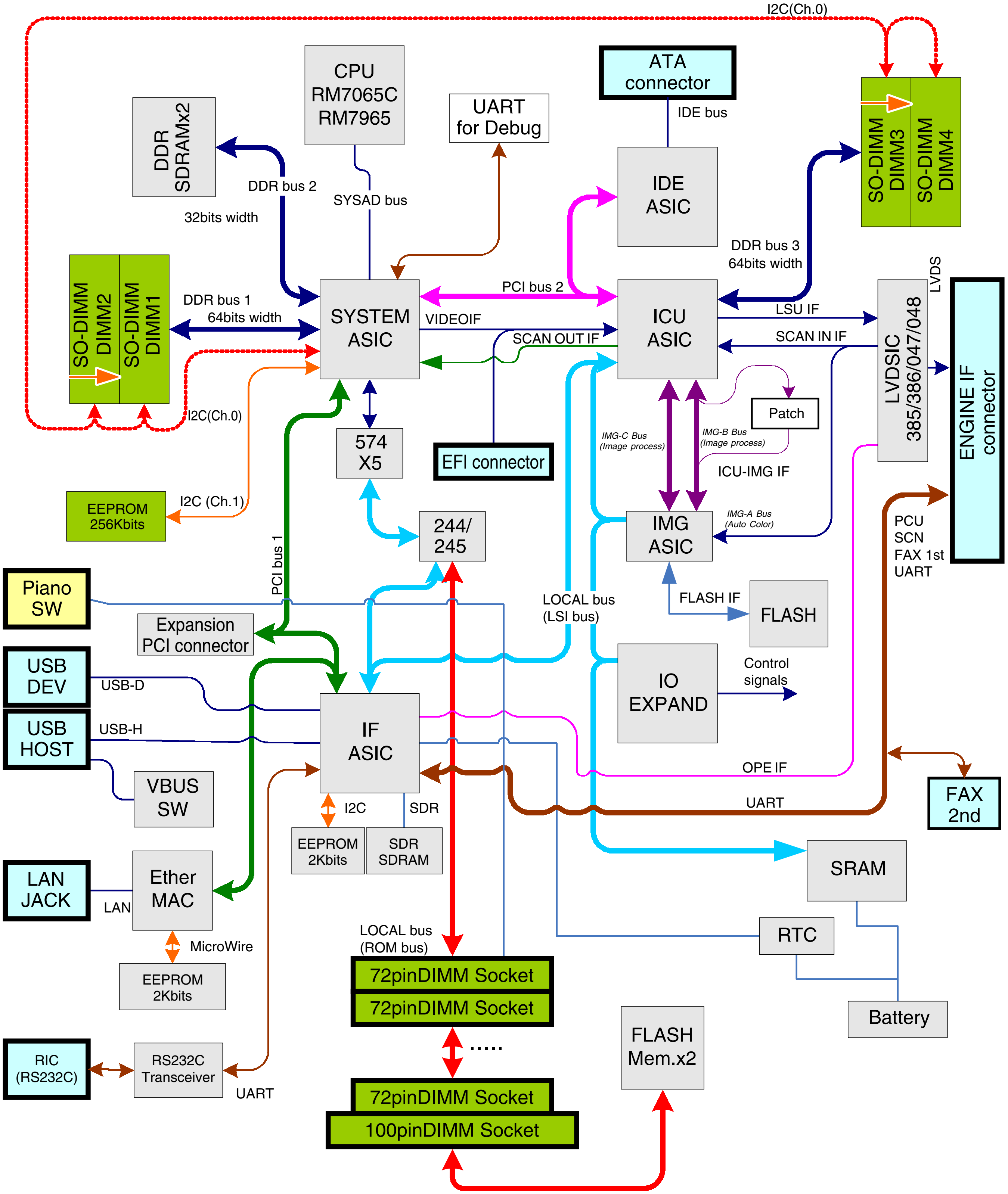
[11] ELECTRICAL SECTION

1. Block diagram

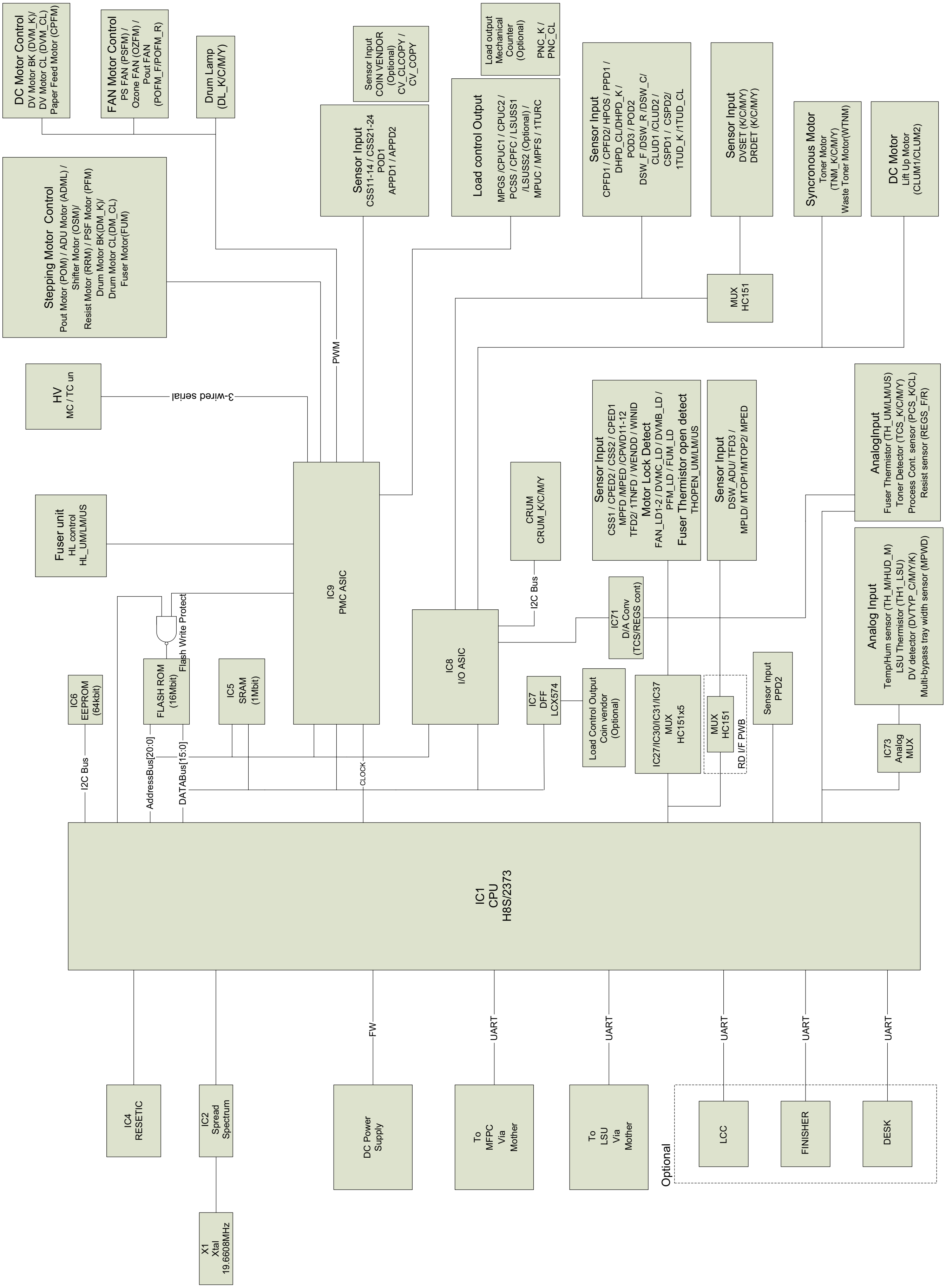
A. System block diagram


RSPF UNIT
SOCD
SCOV
SPED
SRRC
SPPD1
SPPD2
SPPD3
SPFC
SPLS1
SPLS2
SPWS
OPTION
STMPS
SPPD4
SPPD5
RSPF PWB
SGS
SPFM
SPRM
OPERATION UNIT
TOUCH PANEL
LCD
ORS_PD
INVERTER PWB
LVDS PWB
OPE PWB
POWER SW PWB
OPTION
AUDITOR
PNC
ORS_LED
MIM
OCSW
SCANNER UNIT
SCNC PWB
OPTION
CARD READER
CL
CL INVERTER PWB
CCD PWB
MHPS
OPTION
DHS1
LSU UNIT
TH1_LSU
BD_K PWB
LD_K PWB
LD_C PWB
LD_M PWB
LD_Y PWB
PGM
LSU CNT PWB
CPUFM
HDDFM
HDD
OPTION
FAX 2
MFPC PWB
LSUSS
OPTION
FIN 1K
FIN INNER
DH_LCC
LCC
CONVENDER
DH_DESK
DESK
DH1
OPTION
DHSW
WH PWB
Standards : Only Japan
OPTION
DOCC PWB
SCN IN PWB
MOTHER PWB
If DOCC PWB is used,replace it with SCN IN PWB.
OPTION
FAX 1
There is a standards setting model Only Japan
DRIVER SUB PWB
PCU PWB
DCPS
AC PWB
MSW
AC IN
PSFM
HL PWB
TONER_Y UNIT
DVCRUM_Y
TNM_Y
DVM_CL
DL_Y
DV_Y UNIT
TCS_Y
DVTYP_Y
TONER_M UNIT
DVCRUM_M
TNM_M
DM_CL
DHPD_CL
DL_M
DV_M UNIT
TCS_M
DVTYP_M
TONER_C UNIT
DVCRUM_C
TNM_C
DVM_K
DL_C
DV_C UNIT
TCS_C
DVTYP_C
TONER_K UNIT
DVCRUM_K
TNM_K
DM_K
DHPD_K
DL_K
DV_K UNIT
TCS_K
DVTYP_K
PROCESS DRIVE UNIT
OPTION
PNC
1TNFD
WTNM
DSW_F
1TUD_CL
1TUD_K
2TC
1TURC
RRM
ADUM_L
OZFM
CSS2
1TC
CSS1
MC
DSW_R
PAPER FEED 2 UNIT
CPFD2
CLUD2
CPED2
CSPD2
PAPER FEED 1 UNIT
CPFD1
CLUD1
CPED1
CSPD1
DSW_C
PAPER FEED DRIVE UNIT
CLUM2
CPUC2
CPFM
CLUM1
CPUC1
CPFC
PFM
DRIVER MAIN PWB
REGIST SENSOR UNIT
PCS
REGS_F
REGS_R
PCSS
DELIVERY UNIT
POFM_F
POFM_R
OSM
FUM
POD1
POD2
TFD2
HPOS
POM
FUSER UNIT
HL1_U
HL2_L
HL3_U
TH1_FU
TH2_FU
TH3_FU
PS UNIT
PPD1
PPD2
RIGHT DOOR UNIT
RD I/F PWB
POD3
TFD3
APPD1
APPD2
DSW_ADU
MANUAL PAPER FEED UNIT
MPUC
MPFS
MPGS
MPLD1
MTOP1
MTOP2
MPWD
MPED
MPFD
TH/HUD_M

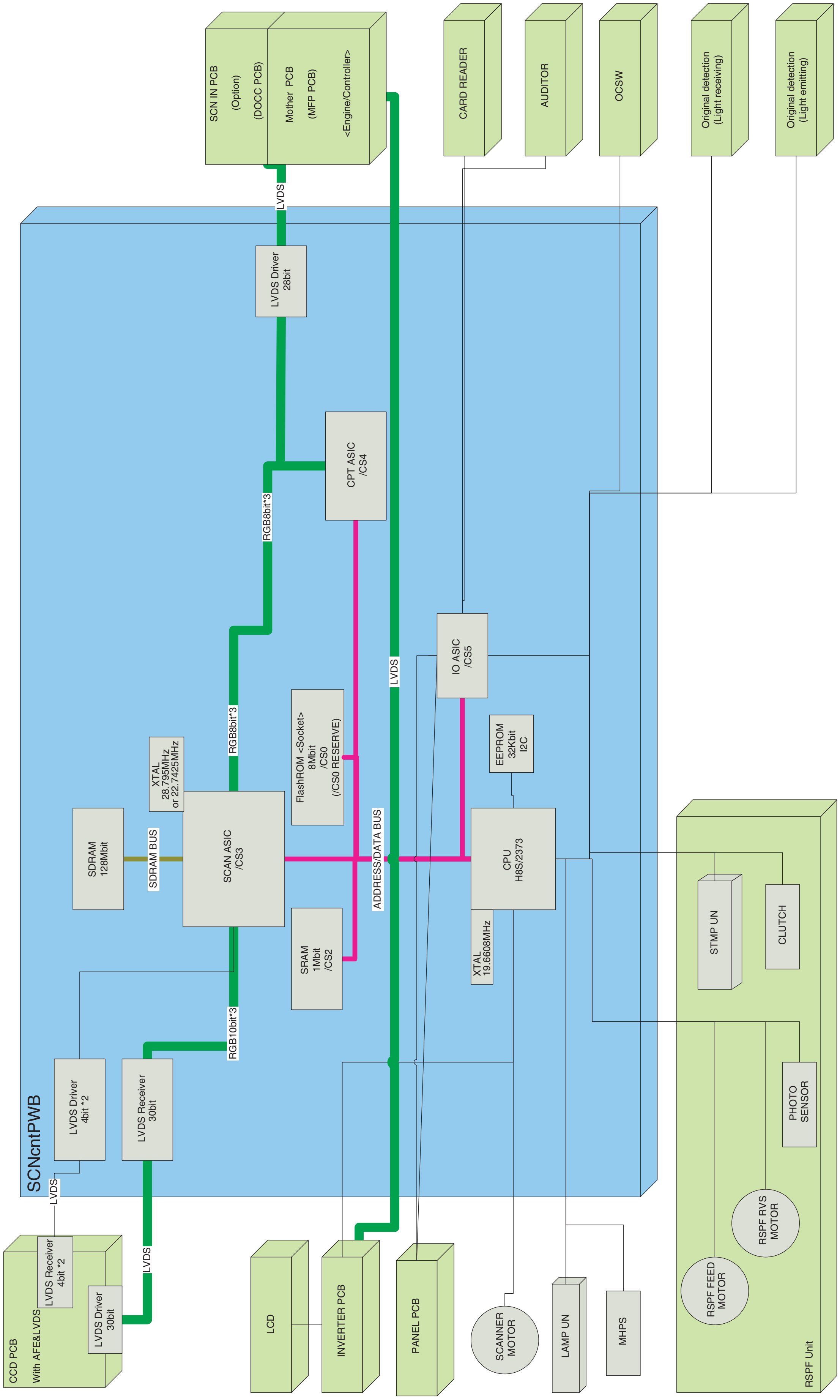
B. MFP controller PWB


I2C(Ch.0)
CPU
RM7065C
RM7965
ATA
connector
UART
for Debug
IDE bus
DDR
SDRAMx2
DDR bus 2
SYSAD bus
IDE
ASIC
SO-DIMM
DIMM3
SO-DIMM
DIMM4
32bits width
DDR bus 3
64bits width
SO-DIMM
DIMM2
SO-DIMM
DIMM1
DDR bus 1
64bits width
SYSTEM
ASIC
PCI bus 2
VIDEOIF
SCAN OUT IF
ICU
ASIC
LSU IF
SCAN IN IF
LVDS
LVDSIC
385/386/047/048
ENGINE IF
connector
I2C(Ch.0)
574
X5
EFI connector
IMG-C Bus
(Image process)
IMG-B Bus
(Image process)
Patch
ICU-IMG IF
EEPROM
256Kbits
I2C (Ch.1)
244/
245
IMG
ASIC
IMG-A Bus
(Auto Color)
PCU
SCN
FAX 1st
UART
PCI bus 1
Piano
SW
LOCAL bus
(LSI bus)
FLASH IF
FLASH
Expansion
PCI connector
USB
DEV
USB-D
IO
EXPAND
Control
signals
USB
HOST
USB-H
IF
ASIC
OPE IF
VBUS
SW
I2C
SDR
UART
FAX
2nd
EEPROM
2Kbits
SDR
SDRAM
SRAM
LAN
JACK
LAN
Ether
MAC
MicroWire
LOCAL bus
(ROM bus)
RTC
EEPROM
2Kbits
72pinDIMM Socket
72pinDIMM Socket
Battery
.....
FLASH
Mem.x2
RIC
(RS232C)
RS232C
Transceiver
UART
72pinDIMM Socket
100pinDIMM Socket

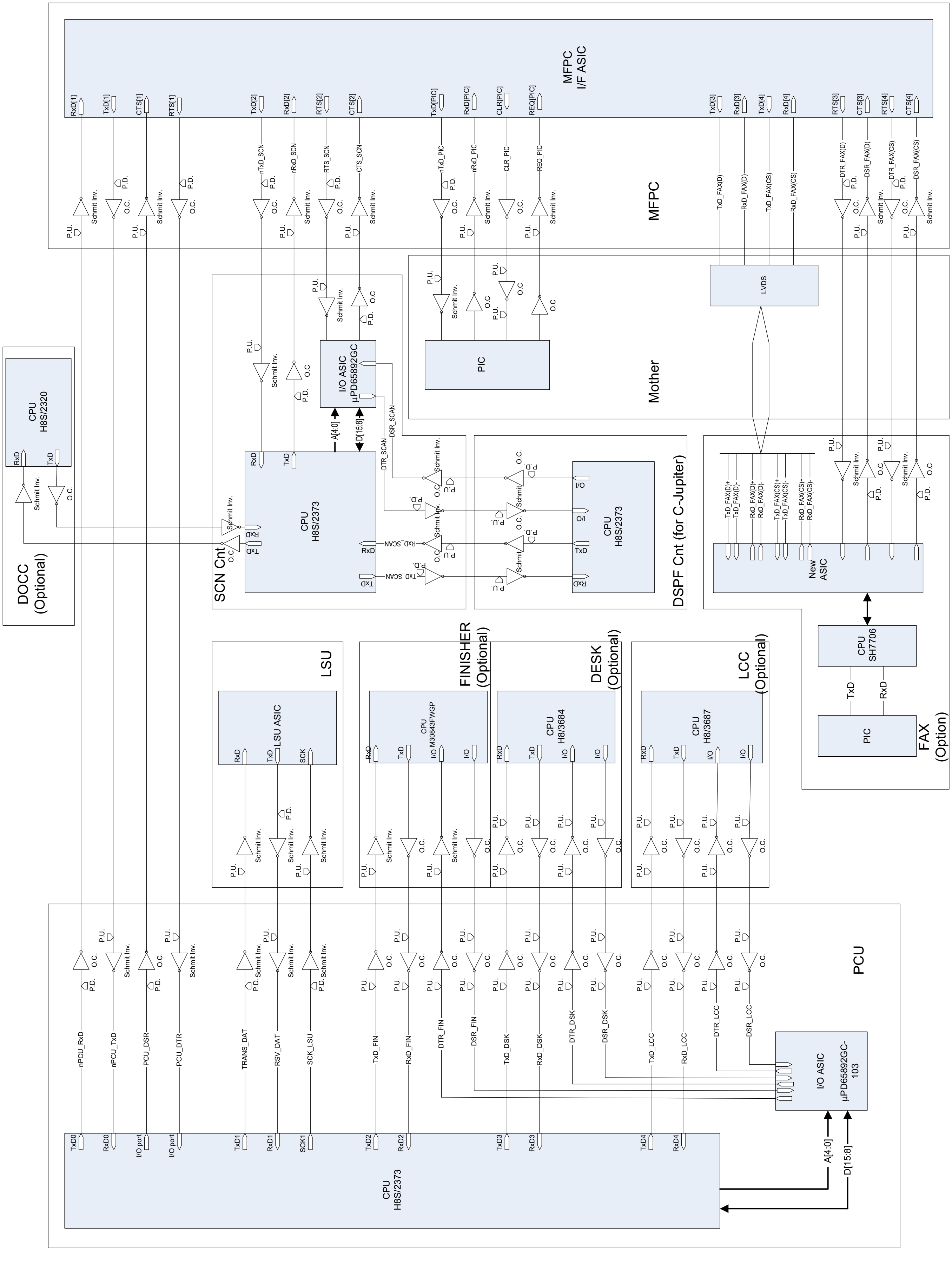
C. PCU PWB


DC Motor Control
DV Motor BK (DVM_K)/
DV Motor CL (DVM_CL)
Paper Feed Motor (CPFM)
FAN Motor Control
PS FAN (PSFM) /
Ozone FAN (OZFM) /
Pout FAN
(POFM_F/POFM_R)
Drum Lamp
(DL_K/C/M/Y)
Sensor Input
COIN VENDOR
(Optional)
CV_CLCOPY /
CV_COPY
Load output
Mechanical
Counter
(Optional)
PNC_K /
PNC_CL
Sensor Input
CSS11-14 / CSS21-24
POD1
APPD1 / APPD2
Load control Output
MPGS /CPUC1 / CPUC2 /
PCSS / CPFC / LSUSS1
/LSUSS2 (Optional) /
MPUC / MPFS / 1TURC
Sensor Input
CPFD1 / CPFD2/ HPOS / PPD1 /
DHPD_CL/DHPD_K /
POD3 / POD2
DSW_F /DSW_R /DSW_C/
CLUD1 /CLUD2 /
CSPD1 / CSPD2/
1TUD_K /1TUD_CL
Sensor Input
DVSET (K/C/M/Y)
DRDET (K/C/M/Y)
Syncronous Motor
Toner Motor
(TNM_K/C/M/Y)
Waste Toner Motor(WTNM)
DC Motor
Lift Up Motor
(CLUM1/CLUM2)
Stepping Motor Control
Pout Motor (POM) / ADU Motor (ADML) /
Shifter Motor (OSM)/
Resist Motor (RRM) / PSF Motor (PFM)
Drum Motor BK(DM_K)/
Drum Motor CL(DM_CL)
Fuser Motor(FUM)
MUX
HC151
PWM
HV
MC / TC un
3-wired serial
AnalogInput
Fuser Thermistor (TH_UM/LM/US)
Toner Detector (TCS_K/C/M/Y)
Process Cont. sensor (PCS_K/CL)
Resist sensor (REGS_F/R)
Sensor Input
CSS1 / CPED2 / CSS2 / CPED1
MPFD /MPED /CPWD11-12
TFD2/ 1TNFD / WENDD / WINID
Motor Lock Detect
FAN_LD1-2 / DVMC_LD / DVMB_LD /
PFM_LD / FUM_LD
Fuser Thermistor open detect
THOPEN_UM/LM/US
Sensor Input
DSW_ADU/ TFD3 /
MPLD/ MTOP1/MTOP2/ MPED
CRUM
CRUM_K/C/M/Y
Fuser unit
HL_control
HL_UM/LM/US
IC9
PMC ASIC
I2C Bus
IC71
D/A Conv
(TCS/REGS cont)
Analog Input
Temp/Hum sensor (TH_M/HUD_M)
LSU Thermistor (TH1_LSU)
DV detector (DVTYP_C/M/Y/K)
Multi-bypass tray width sensor (MPWD)
Flash Write Protect
IC8
I/O ASIC
IC6
EEPROM
(64kbit)
FLASH ROM
(16Mbit)
IC5
SRAM
(1Mbit)
IC7
DFF
LCX574
Load Control Output
Coin vendor
(Optional)
IC27/IC30/IC31/IC37
MUX
HC151x5
MUX
HC151
RD I/F PWB
Sensor Input
PPD2
IC73
Analog
MUX
I2C Bus
AddressBus[20:0]
DATABus[15:0]
CLOCK
IC1
CPU
H8S/2373
FW
UART
UART
UART
UART
UART
IC4
RESETIC
IC2
Spread
Spectrum
DC Power
Supply
To
MFPC
Via
Mother
To
LSU
Via
Mother
Optional
LCC
FINISHER
DESK
X1
Xtal
19.6608MHz

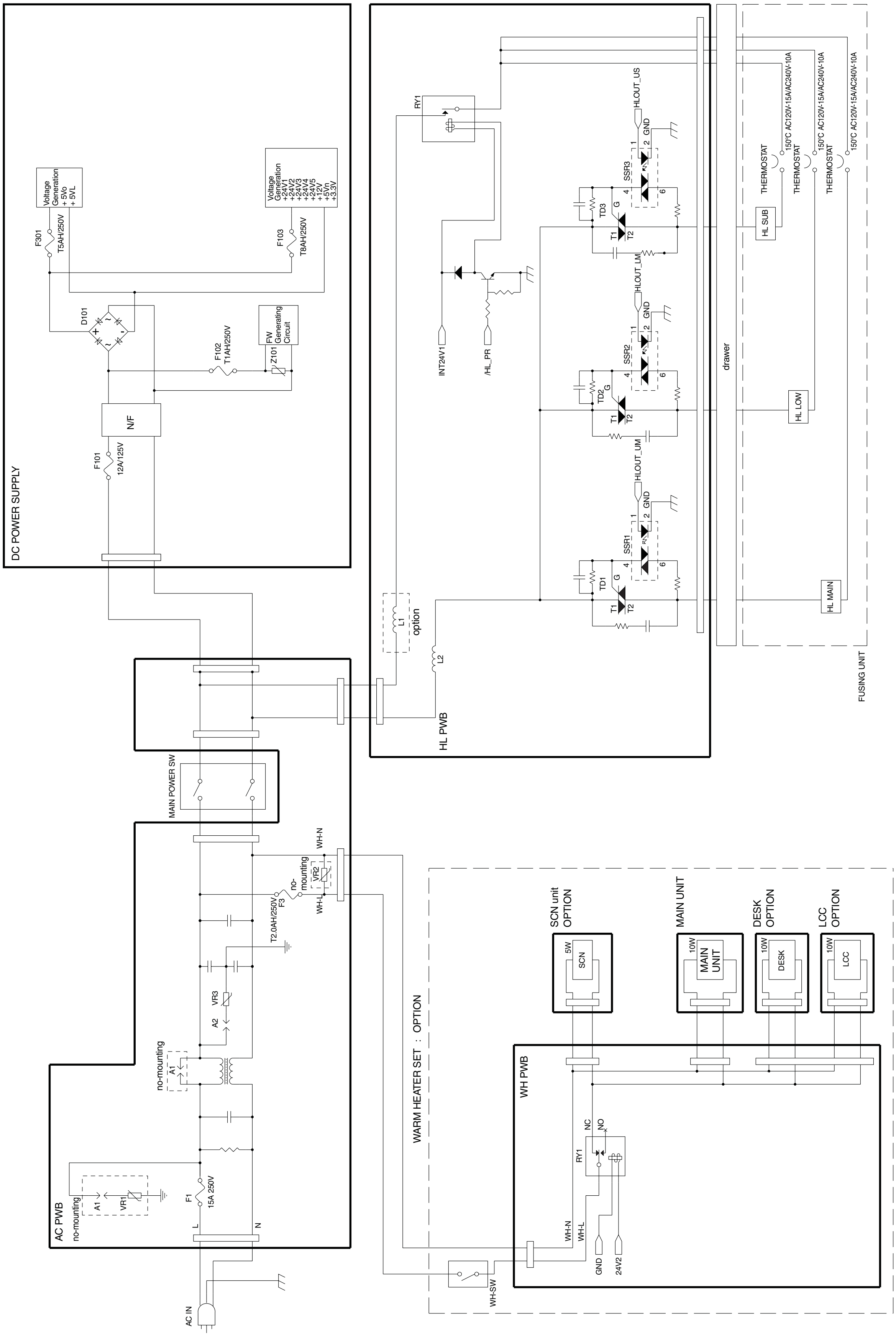
D. Scanner control PWB


SCN IN PCB
(Option)
(DOCC PCB)
Mother PCB
(MFP PCB)
<Engine/Controller>
CARD READER
AUDITOR
OCSW
Original detection
(Light receiving)
Original detection
(Light emitting)
LVDS
SCNcntPWB
LVDS Driver
28bit
CPT ASIC
/CS4
RGB8bit*3
LVDS
IO ASIC
/CS5
FlashROM <Socket>
8Mbit
/CS0
(/CS0 RESERVE)
RGB8bit*3
XTAL
28.795MHz
or 22.7425MHz
EEPROM
32Kbit
I2C
SDRAM
128Mbit
SDRAM BUS
SCAN ASIC
/CS3
ADDRESS/DATA BUS
CPU
H8S/2373
XTAL
19.6608MHz
SRAM
1Mbit
/CS2
RGB10bit*3
LVDS Driver
4bit *2
LVDS Receiver
30bit
LVDS
LVDS
CCD PCB
With AFE&LVDS
LVDS Receiver
4bit *2
LVDS Driver
30bit
LCD
INVERTER PCB
PANEL PCB
SCANNER
MOTOR
LAMP UN
MHPS
STMP UN
CLUTCH
PHOTO
SENSOR
RSPF RVS
MOTOR
RSPF FEED
MOTOR
RSPF Unit

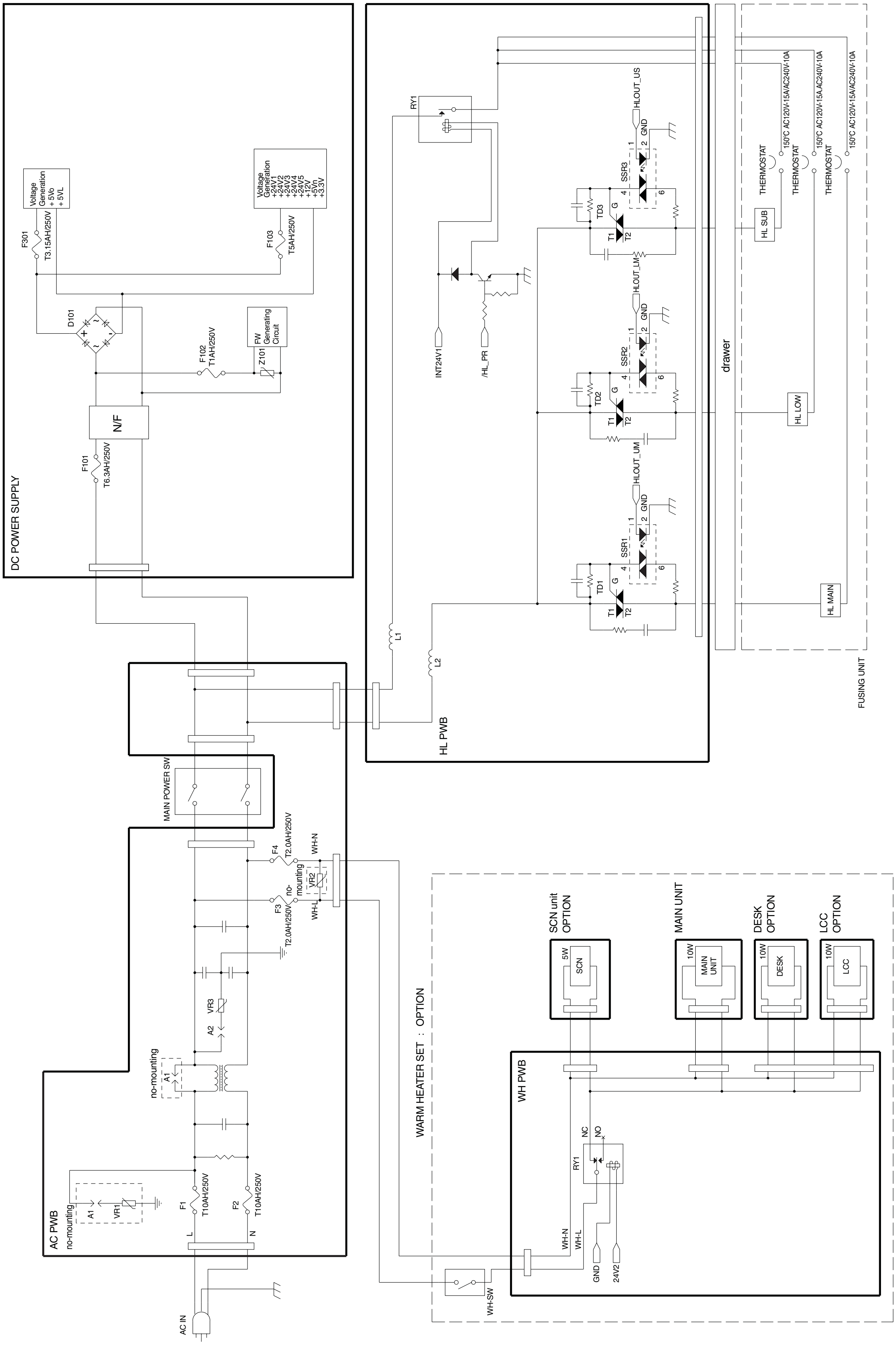
E. Serial communication


MFPC
I/F ASIC
MFPC
Mother
PIC
LVDS
SCN Cnt
CPU
H8S/2373
I/O ASIC
µPD65892GC
DSPF Cnt (for C-Jupiter)
DOCC
(Optional)
CPU
H8S/2320
New
ASIC
CPU
SH7706
FAX
(Option)
LSU
LSU ASIC
FINISHER
(Optional)
CPU
M30843FWGP
DESK
(Optional)
CPU
H8/3684
LCC
(Optional)
CPU
H8/3687
PCU
I/O ASIC
µPD65892GC-103
A[4:0]
D[15:8]
RxD[1]
TxD[1]
CTS[1]
RTS[1]
TxD[2]
RxD[2]
RTS[2]
CTS[2]
TxD[PIC]
RxD[PIC]
CLR[PIC]
REQ[PIC]
TxD[3]
RxD[3]
TxD[4]
RxD[4]
RTS[3]
CTS[3]
RTS[4]
CTS[4]
nTxD_SCN
nRxD_SCN
RTS_SCN
CTS_SCN
nTxD_PIC
nRxD_PIC
CLR_PIC
REQ_PIC
TxD_FAX(D)
RxD_FAX(D)
TxD_FAX(CS)
RxD_FAX(CS)
DTR_FAX(D)
DSR_FAX(D)
DTR_FAX(CS)
DSR_FAX(CS)
DTR_SCAN
DSR_SCAN
RxD_SCAN
TxD_SCAN
nPCU_RxD
nPCU_TxD
PCU_DSR
PCU_DTR
TRANS_DAT
RSV_DAT
SCK_LSU
TxD_FIN
RxD_FIN
DTR_FIN
DSR_FIN
TxD_DSK
RxD_DSK
DTR_DSK
DSR_DSK
TxD_LCC
RxD_LCC
DTR_LCC
DSR_LCC
TxD0
RxD0
I/O port
TxD1
RxD1
SCK1
TxD2
RxD2
TxD3
RxD3
TxD4
RxD4
RxD
TxD
SCK
I/O
Schmit Inv.
O.C.
P.U.
P.D.
Schmit

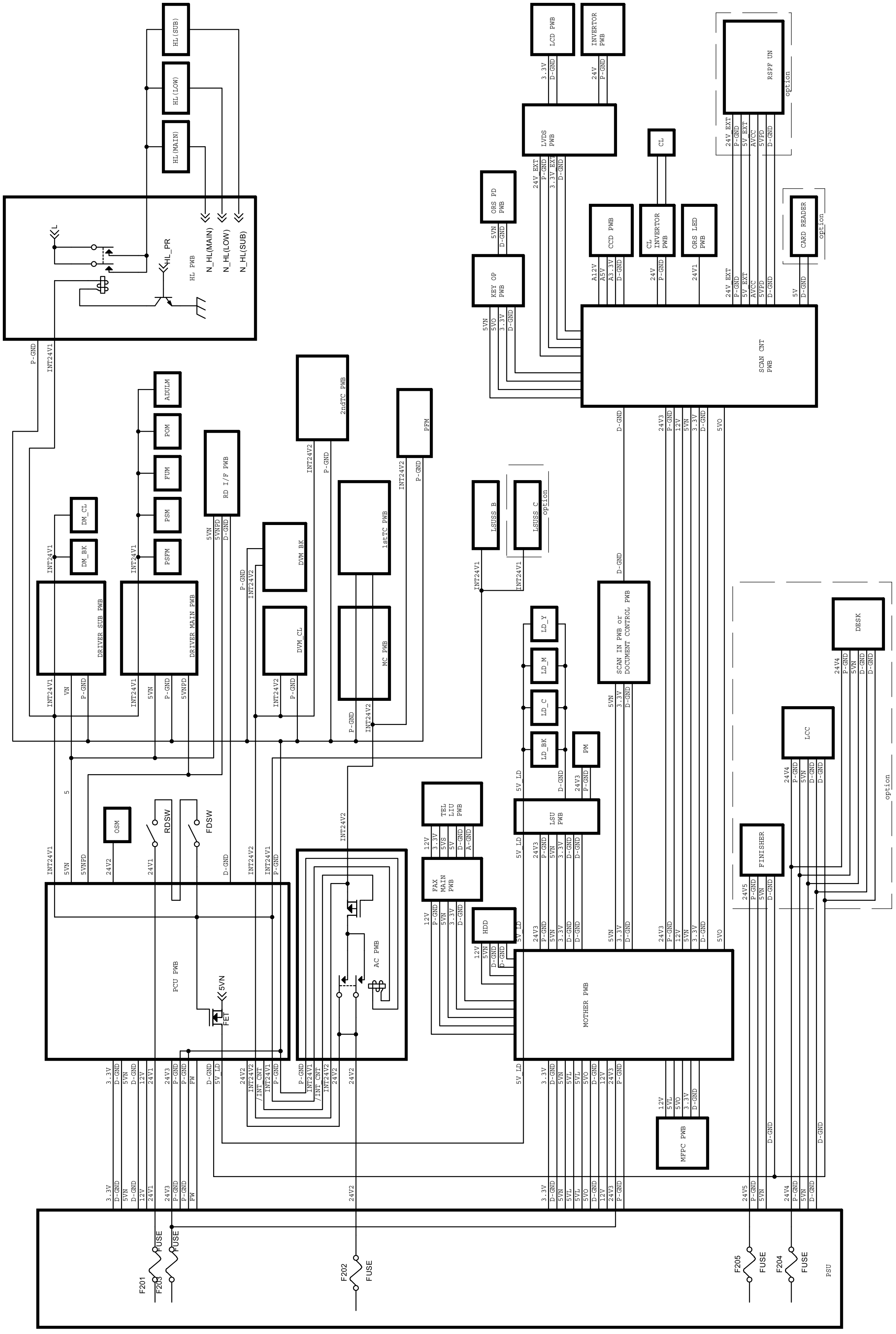
F. AC power line diagram (100V series)


DC POWER SUPPLY
F301
T5AH/250V
Voltage Generation + 5Vo + 5VL
Voltage Generation +24V1 +24V2 +24V3 +24V4 +24V5 +12V +5Vn +3.3V
F103
T8AH/250V
D101
FW Generating Circuit
Z101
F102
T1AH/250V
N/F
F101
12A/125V
HL PWB
RY1
INT24V1
/HL_PR
HLOUT_US
HLOUT_LM
HLOUT_UM
GND
SSR3
SSR2
SSR1
TD3
TD2
TD1
T1
T2
G
drawer
THERMOSTAT
150°C AC120V-15A/AC240V-10A
HL SUB
HL LOW
HL MAIN
FUSING UNIT
L1
option
L2
MAIN POWER SW
WH-N
WH-L
no-mounting
VR2
F3
T2.0AH/250V
VR3
A2
A1
AC PWB
VR1
F1
15A 250V
L
N
AC IN
WARM HEATER SET : OPTION
WH PWB
RY1
NC
NO
GND
24V2
WH-SW
SCN unit OPTION
5W
SCN
MAIN UNIT
10W
MAIN UNIT
DESK OPTION
10W
DESK
LCC OPTION
10W
LCC

G. AC power line diagram (200V series)

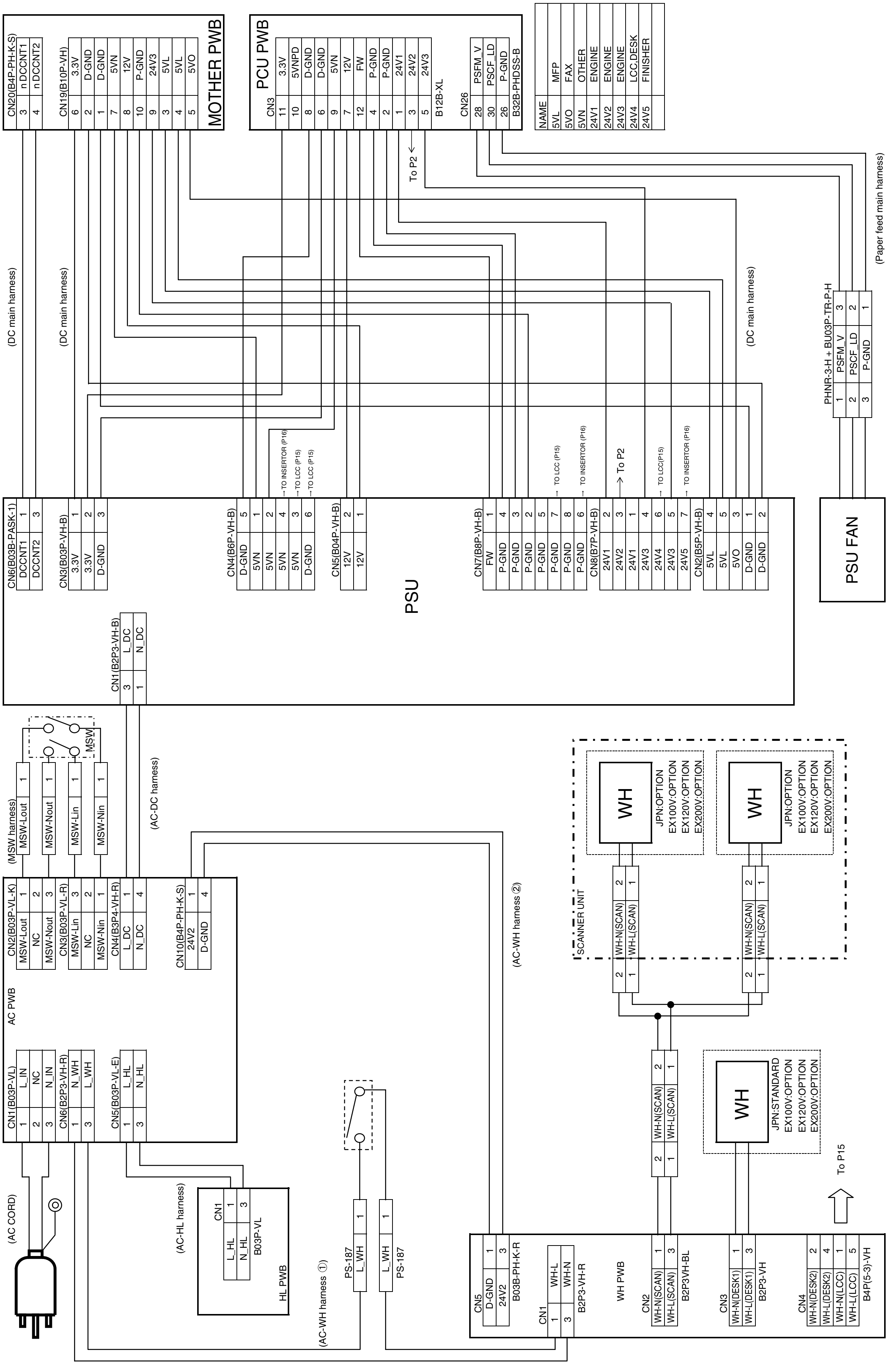

DC POWER SUPPLY
F301
T3.15AH/250V
Voltage Generation
+5Vo
+5VL
F103
T5AH/250V
Voltage Generation
+24V1
+24V2
+24V3
+24V4
+24V5
+12V
+5Vn
+3.3V
D101
F102
T1AH/250V
Z101
FW Generating Circuit
N/F
F101
T6.3AH/250V
HL PWB
RY1
INT24V1
/HL_PR
L1
L2
TD1
TD2
TD3
T1
T2
G
SSR1
SSR2
SSR3
1
2
4
6
GND
HLOUT_UM
HLOUT_LM
HLOUT_US
drawer
HL MAIN
HL LOW
HL SUB
THERMOSTAT
150°C AC120V-15A/AC240V-10A
FUSING UNIT
MAIN POWER SW
AC PWB
no-mounting
A1
VR1
F1
T10AH/250V
F2
T10AH/250V
L
N
A2
VR3
F3
T2.0AH/250V
F4
T2.0AH/250V
no-mounting
VR2
WH-L
WH-N
AC IN
WARM HEATER SET : OPTION
WH PWB
WH-SW
NC
NO
GND
24V2
SCN unit OPTION
5W
SCN
MAIN UNIT
10W
MAIN UNIT
DESK OPTION
10W
DESK
LCC OPTION
10W
LCC

H. DC power line diagram

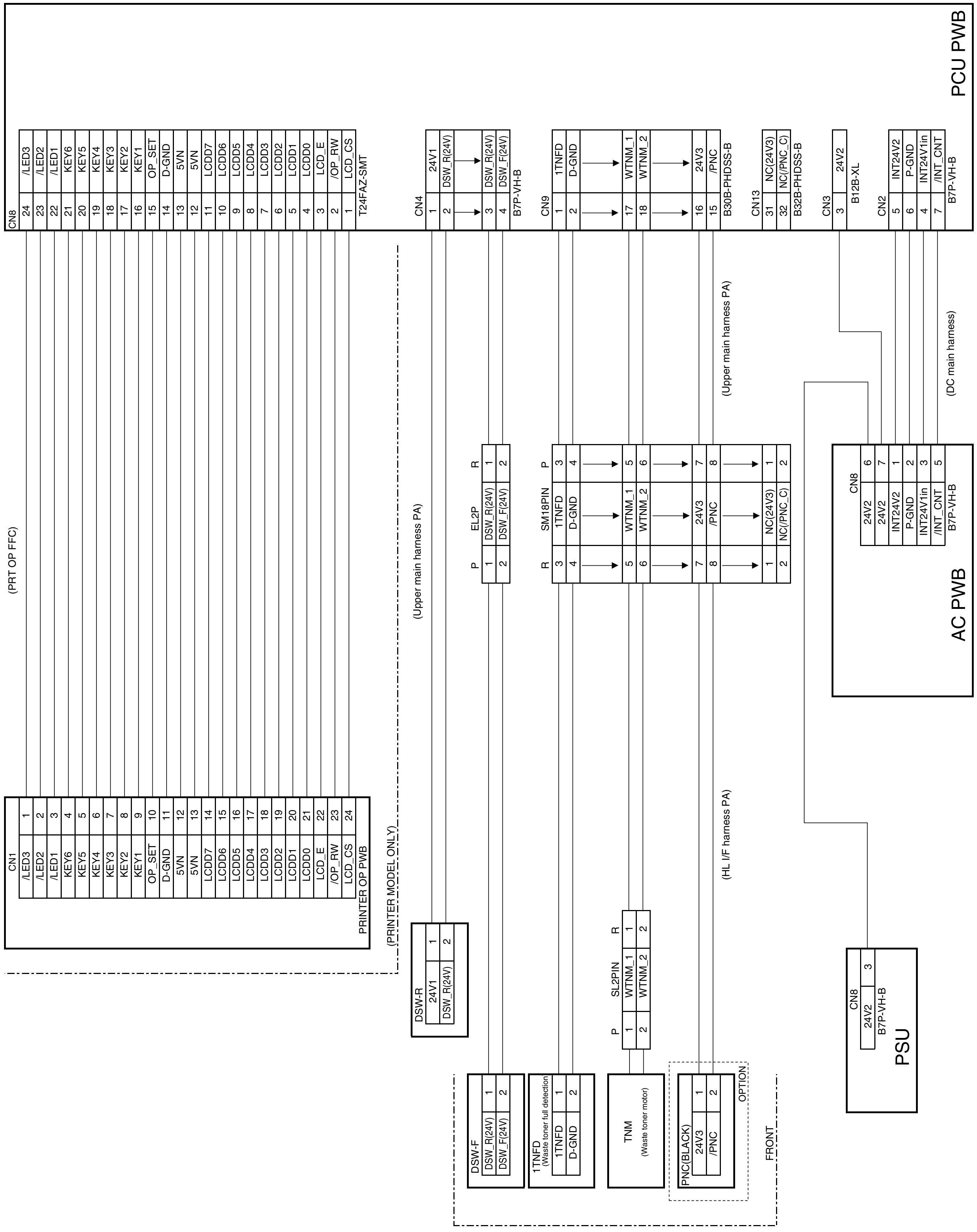

HL(SUB)
HL(LOW)
HL(MAIN)
HL PWB
HL_PR
L
N_HL(MAIN)
N_HL(LOW)
N_HL(SUB)
LCD PWB
INVERTOR PWB
RSPF UN
option
LVDS PWB
CL
ORS PD PWB
CCD PWB
CL INVERTOR PWB
ORS LED PWB
CARD READER
KEY OP PWB
SCAN CNT PWB
ADULM
POM
FUM
PSM
PSFM
2ndTC PWB
PFM
RD I/F PWB
DM_CL
DM_BK
DVM_BK
1stTC PWB
LSUSS_B
LSUSS_C
DRIVER SUB PWB
DRIVER MAIN PWB
DVM_CL
MC PWB
LD_Y
LD_M
LD_C
LD_BK
PM
SCAN IN PWB or DOCUMENT CONTROL PWB
DESK
LCC
TEL LIU PWB
LSU PWB
FINISHER
OSM
RDSW
FDSW
FAX MAIN PWB
HDD
PCU PWB
5VN
FET
AC PWB
MOTHER PWB
MFPC PWB
PSU
F201
F203
FUSE
F202
F205
F204
3.3V
D-GND
5VN
12V
24V1
24V2
24V3
24V4
24V5
P-GND
FW
5VL
5VO
5V_LD
INT24V1
INT24V2
/INT CNT
5VNPD
24V_EXT
5V_EXT
3.3V_EXT
AVCC
5VPD
A12V
A5V
A-GND
5VS
5V

2. Actual wiring chart

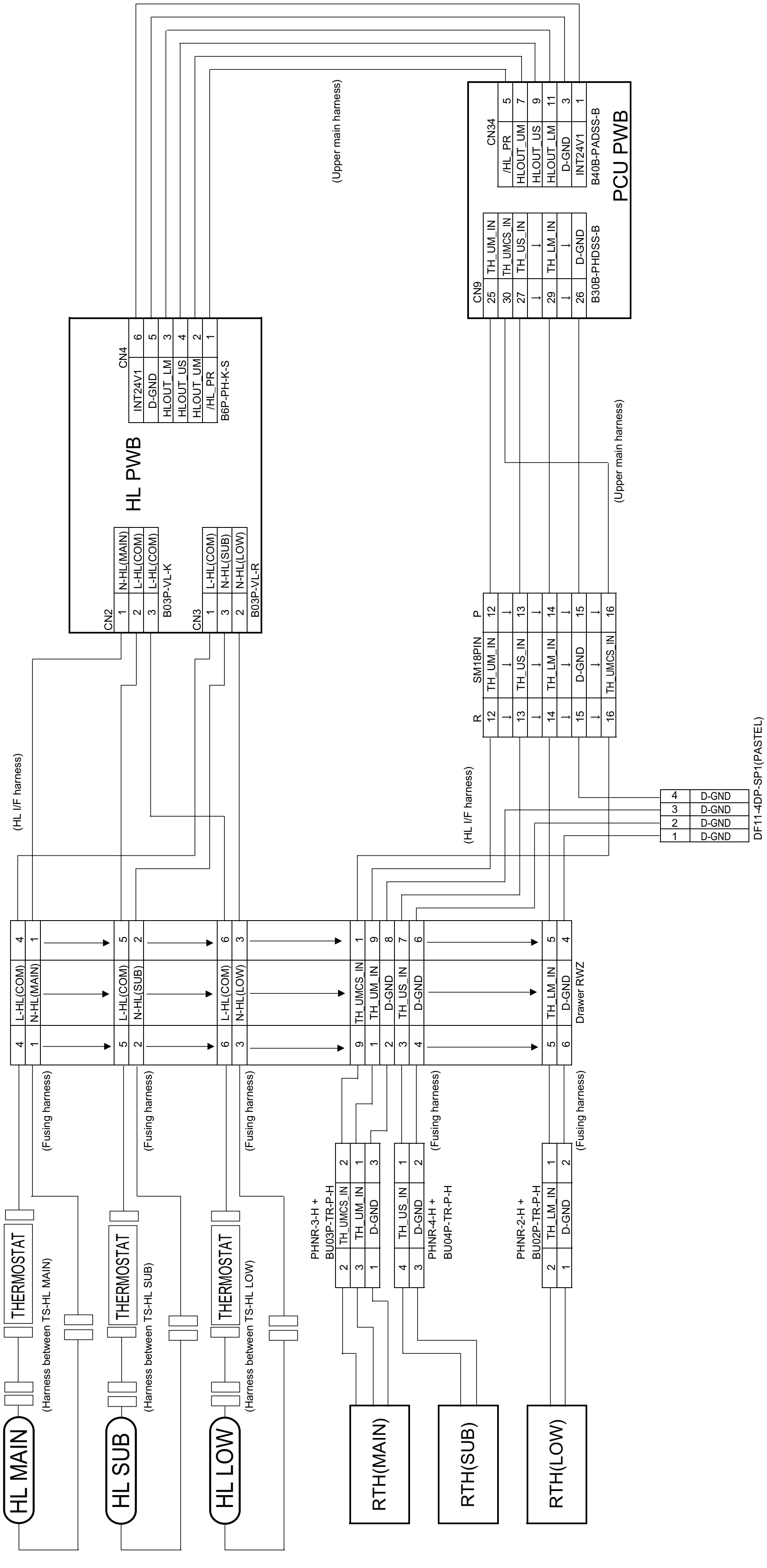
A. Power supply section (P1)


MOTHER PWB
CN20(B4P-PH-K-S)
3 n DCCNT1
4 n DCCNT2
CN19(B10P-VH)
6 3.3V
2 D-GND
1 D-GND
7 5VN
8 12V
10 P-GND
9 24V3
3 5VL
4 5VL
5 5VO
PCU PWB
CN3
11 3.3V
10 5VNPD
8 D-GND
6 D-GND
9 5VN
7 12V
12 FW
4 P-GND
2 P-GND
1 24V1
3 24V2
5 24V3
B12B-XL
CN26
28 PSFM_V
30 PSCF_LD
26 P-GND
B32B-PHDSS-B
NAME
5VL MFP
5VO FAX
5VN OTHER
24V1 ENGINE
24V2 ENGINE
24V3 ENGINE
24V4 LCC,DESK
24V5 FINISHER
To P2
(DC main harness)
(DC main harness)
(DC main harness)
(Paper feed main harness)
PHNR-3-H + BU03P-TR-P-H
1 PSFM_V 3
2 PSCF_LD 2
3 P-GND 1
PSU FAN
PSU
CN6(B03B-PASK-1)
DCCNT1 1
DCCNT2 3
CN3(B03P-VH-B)
3.3V 1
3.3V 2
D-GND 3
CN4(B6P-VH-B)
D-GND 5
5VN 1
5VN 2
5VN 4
5VN 3
D-GND 6
→ TO INSERTOR (P16)
→ TO LCC (P15)
→ TO LCC (P15)
CN5(B04P-VH-B)
12V 2
12V 1
CN7(B8P-VH-B)
FW 1
P-GND 4
P-GND 3
P-GND 2
P-GND 5
P-GND 7
P-GND 8
P-GND 6
→ TO LCC (P15)
→ TO INSERTOR (P16)
CN8(B7P-VH-B)
24V1 2
24V2 3
24V1 1
24V3 4
24V4 6
24V3 5
24V5 7
→ To P2
→ TO LCC(P15)
→ TO INSERTOR (P16)
CN2(B5P-VH-B)
5VL 4
5VL 5
5VO 3
D-GND 1
D-GND 2
CN1(B2P3-VH-B)
3 L_DC
1 N_DC
MSW
(MSW harness)
MSW-Lout 1
MSW-Nout 1
MSW-Lin 1
MSW-Nin 1
(AC-DC harness)
AC PWB
CN2(B03P-VL-K)
MSW-Lout 1
NC 2
MSW-Nout 3
CN3(B03P-VL-R)
MSW-Lin 3
NC 2
MSW-Nin 1
CN4(B3P4-VH-R)
L_DC 1
N_DC 4
CN10(B4P-PH-K-S)
24V2 1
D-GND 4
CN1(B03P-VL)
1 L_IN
2 NC
3 N_IN
CN6(B2P3-VH-R)
1 N_WH
3 L_WH
CN5(B03P-VL-E)
1 L_HL
3 N_HL
(AC CORD)
(AC-HL harness)
CN1
L_HL 1
N_HL 3
B03P-VL
HL PWB
(AC-WH harness ①)
PS-187
L_WH 1
L_WH 1
PS-187
(AC-WH harness ②)
SCANNER UNIT
WH
JPN:OPTION
EX100V:OPTION
EX120V:OPTION
EX200V:OPTION
WH
JPN:OPTION
EX100V:OPTION
EX120V:OPTION
EX200V:OPTION
WH-N(SCAN) 2
WH-L(SCAN) 1
WH-N(SCAN) 2
WH-L(SCAN) 1
WH
JPN:STANDARD
EX100V:OPTION
EX120V:OPTION
EX200V:OPTION
To P15
WH PWB
CN5
D-GND 1
24V2 3
B03B-PH-K-R
CN1
1 WH-L
3 WH-N
B2P3-VH-R
CN2
WH-N(SCAN) 1
WH-L(SCAN) 3
B2P3VH-BL
CN3
WH-N(DESK1) 1
WH-L(DESK1) 3
B2P3-VH
CN4
WH-N(DESK2) 2
WH-L(DESK2) 4
WH-N(LCC) 1
WH-L(LCC) 5
B4P(5-3)-VH

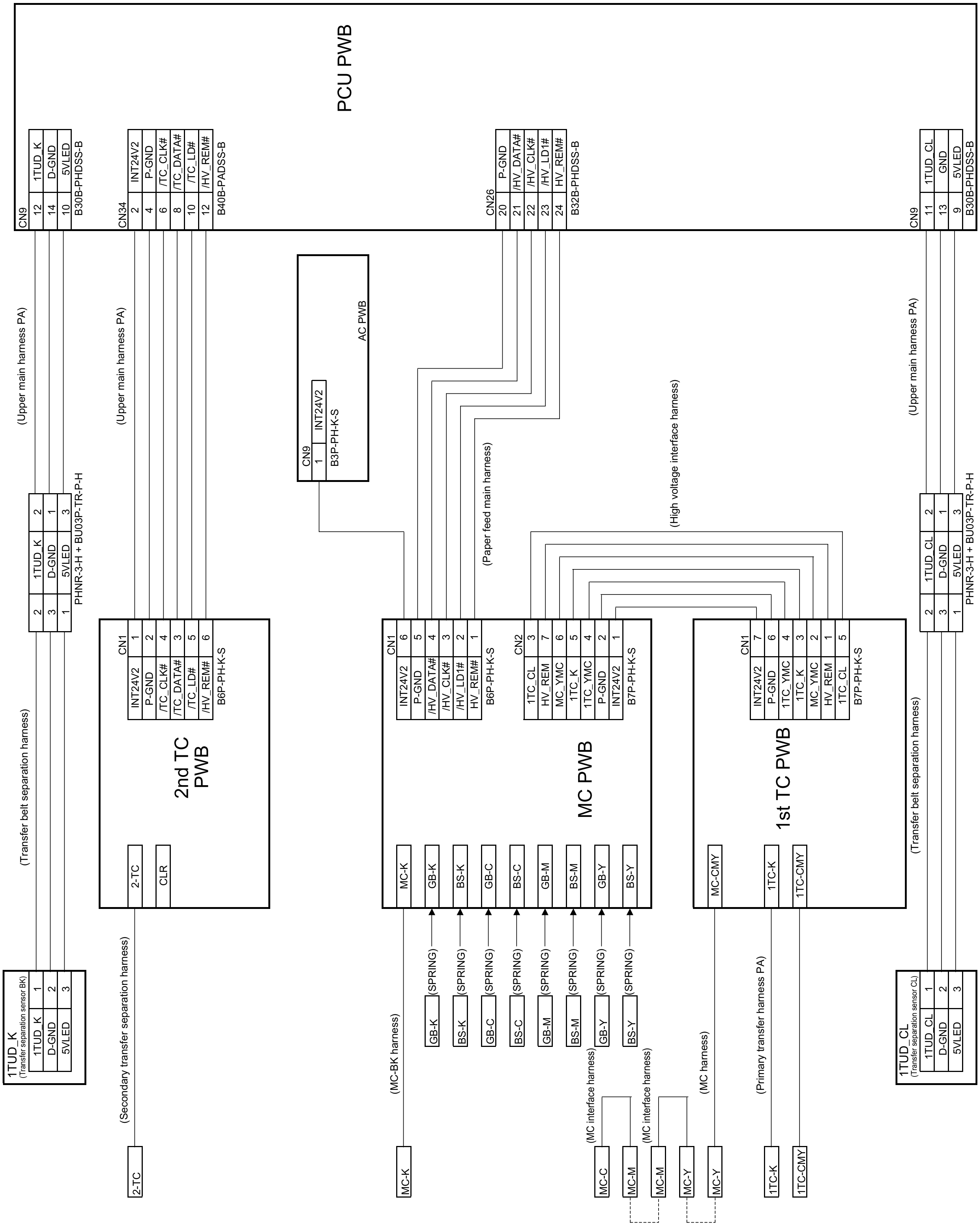
B. Front section (P2)


PCU PWB
CN8
24 /LED3
23 /LED2
22 /LED1
21 KEY6
20 KEY5
19 KEY4
18 KEY3
17 KEY2
16 KEY1
15 OP_SET
14 D-GND
13 5VN
12 5VN
11 LCDD7
10 LCDD6
9 LCDD5
8 LCDD4
7 LCDD3
6 LCDD2
5 LCDD1
4 LCDD0
3 LCD_E
2 /OP_RW
1 LCD_CS
T24FAZ-SMT
CN4
1 24V1
2 DSW_R(24V)
3 DSW_R(24V)
4 DSW_F(24V)
B7P-VH-B
CN9
1 1TNFD
2 D-GND
17 WTNM_1
18 WTNM_2
16 24V3
15 /PNC
B30B-PHDSS-B
CN13
31 NC(24V3)
32 NC(/PNC_C)
B32B-PHDSS-B
CN3
3 24V2
B12B-XL
CN2
5 INT24V2
6 P-GND
4 INT24V1in
7 /INT_CNT
B7P-VH-B
(PRT OP FFC)
(Upper main harness PA)
(Upper main harness PA)
(DC main harness)
EL2P
P R
DSW_R(24V)
DSW_F(24V)
SM18PIN
R P
1TNFD
D-GND
WTNM_1
WTNM_2
24V3
/PNC
NC(24V3)
NC(/PNC_C)
AC PWB
CN8
6 24V2
7 24V2
1 INT24V2
2 P-GND
3 INT24V1in
5 /INT_CNT
B7P-VH-B
CN1
1 /LED3
2 /LED2
3 /LED1
4 KEY6
5 KEY5
6 KEY4
7 KEY3
8 KEY2
9 KEY1
10 OP_SET
11 D-GND
12 5VN
13 5VN
14 LCDD7
15 LCDD6
16 LCDD5
17 LCDD4
18 LCDD3
19 LCDD2
20 LCDD1
21 LCDD0
22 LCD_E
23 /OP_RW
24 LCD_CS
PRINTER OP PWB
(PRINTER MODEL ONLY)
(HL I/F harness PA)
DSW-R
1 24V1
2 DSW_R(24V)
SL2PIN
P R
1 WTNM_1
2 WTNM_2
CN8
3 24V2
B7P-VH-B
PSU
DSW-F
1 DSW_R(24V)
2 DSW_F(24V)
1TNFD
(Waste toner full detection)
1 1TNFD
2 D-GND
TNM
(Waste toner motor)
PNC(BLACK)
1 24V3
2 /PNC
OPTION
FRONT

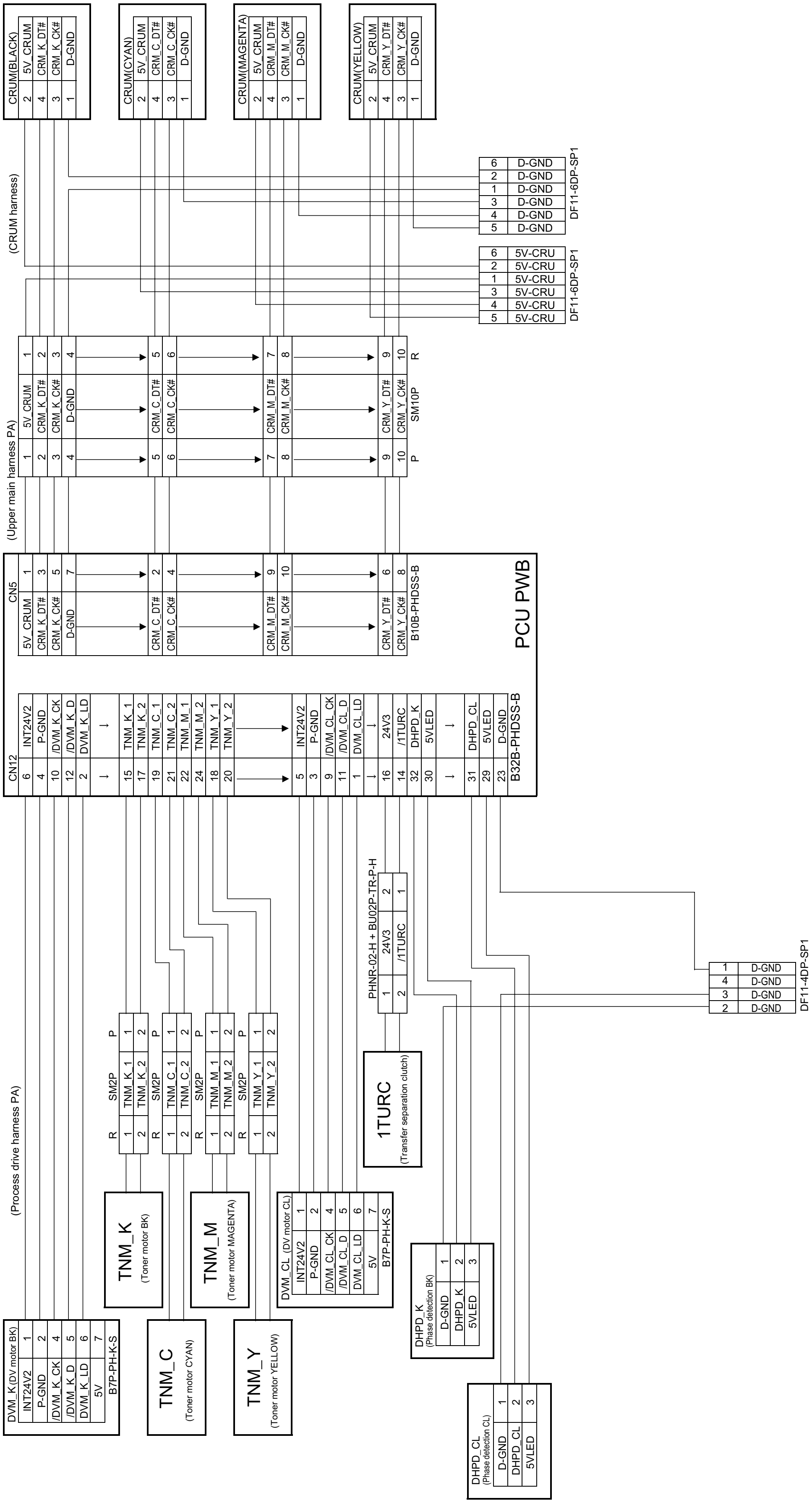
C. Fusing unit section (P3)


PCU PWB
CN34
/HL_PR 5
HLOUT_UM 7
HLOUT_US 9
HLOUT_LM 11
D-GND 3
INT24V1 1
B40B-PADSS-B
CN9
25 TH_UM_IN
30 TH_UMCS_IN
27 TH_US_IN
29 TH_LM_IN
26 D-GND
B30B-PHDSS-B
(Upper main harness)
HL PWB
CN4
INT24V1 6
D-GND 5
HLOUT_LM 3
HLOUT_US 4
HLOUT_UM 2
/HL_PR 1
B6P-PH-K-S
CN2
1 N-HL(MAIN)
2 L-HL(COM)
3 L-HL(COM)
B03P-VL-K
CN3
1 L-HL(COM)
3 N-HL(SUB)
2 N-HL(LOW)
B03P-VL-R
R
SM18PIN
P
12 TH_UM_IN 12
13 TH_US_IN 13
14 TH_LM_IN 14
15 D-GND 15
16 TH_UMCS_IN 16
4 D-GND
3 D-GND
2 D-GND
1 D-GND
DF11-4DP-SP1(PASTEL)
(HL I/F harness)
(HL I/F harness)
4 L-HL(COM) 4
1 N-HL(MAIN) 1
5 L-HL(COM) 5
2 N-HL(SUB) 2
6 L-HL(COM) 6
3 N-HL(LOW) 3
9 TH_UMCS_IN 1
1 TH_UM_IN 9
2 D-GND 8
3 TH_US_IN 7
4 D-GND 6
5 TH_LM_IN 5
6 D-GND 4
Drawer RWZ
(Fusing harness)
(Fusing harness)
(Fusing harness)
(Fusing harness)
(Fusing harness)
PHNR-3-H +
BU03P-TR-P-H
2 TH_UMCS_IN 2
3 TH_UM_IN 1
1 D-GND 3
PHNR-4-H +
BU04P-TR-P-H
4 TH_US_IN 1
3 D-GND 2
PHNR-2-H +
BU02P-TR-P-H
2 TH_LM_IN 1
1 D-GND 2
THERMOSTAT
THERMOSTAT
THERMOSTAT
(Harness between TS-HL MAIN)
(Harness between TS-HL SUB)
(Harness between TS-HL LOW)
HL MAIN
HL SUB
HL LOW
RTH(MAIN)
RTH(SUB)
RTH(LOW)

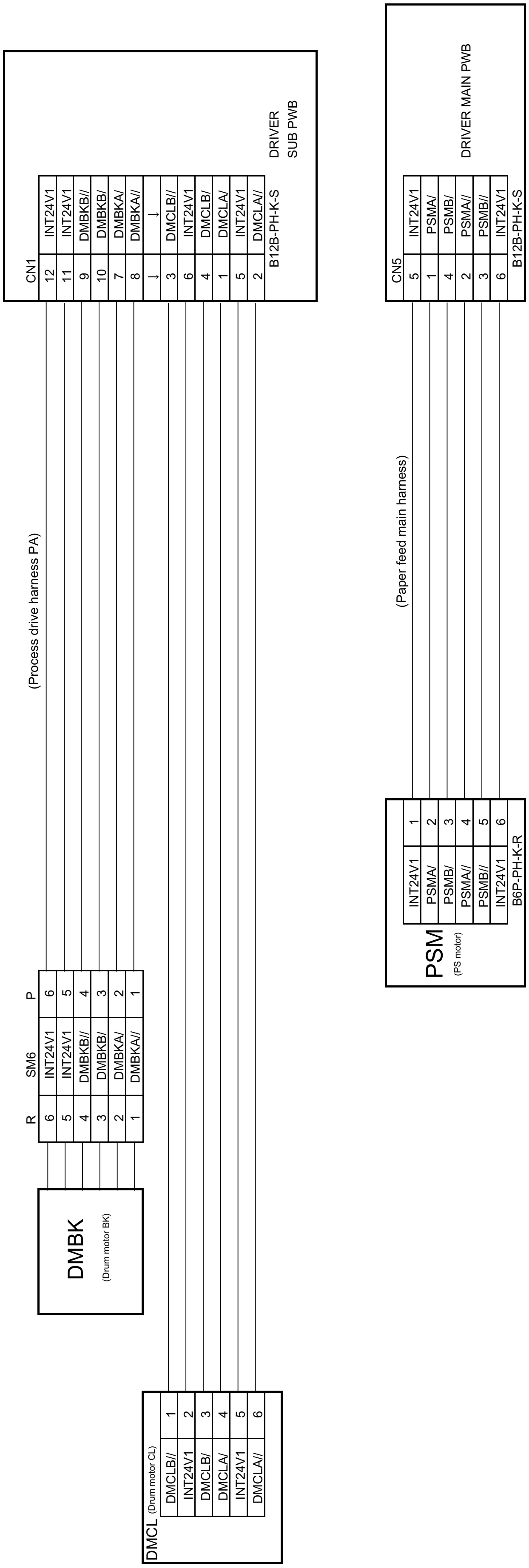
D. High voltage section (P4)


PCU PWB
CN9
12 1TUD_K
14 D-GND
10 5VLED
B30B-PHDSS-B
CN34
2 INT24V2
4 P-GND
6 /TC_CLK#
8 /TC_DATA#
10 /TC_LD#
12 /HV_REM#
B40B-PADSS-B
CN26
20 P-GND
21 /HV_DATA#
22 /HV_CLK#
23 /HV_LD1#
24 HV_REM#
B32B-PHDSS-B
CN9
11 1TUD_CL
13 GND
9 5VLED
B30B-PHDSS-B
(Upper main harness PA)
(Upper main harness PA)
(Upper main harness PA)
AC PWB
CN9
1 INT24V2
B3P-PH-K-S
(Paper feed main harness)
(High voltage interface harness)
2 1TUD_K 2
3 D-GND 1
1 5VLED 3
PHNR-3-H + BU03P-TR-P-H
2 1TUD_CL 2
3 D-GND 1
1 5VLED 3
PHNR-3-H + BU03P-TR-P-H
(Transfer belt separation harness)
(Transfer belt separation harness)
2nd TC PWB
CN1
INT24V2 1
P-GND 2
/TC_CLK# 4
/TC_DATA# 3
/TC_LD# 5
/HV_REM# 6
B6P-PH-K-S
2-TC
CLR
MC PWB
CN1
INT24V2 6
P-GND 5
/HV_DATA# 4
/HV_CLK# 3
/HV_LD1# 2
HV_REM# 1
B6P-PH-K-S
CN2
1TC_CL 3
HV_REM 7
MC_YMC 6
1TC_K 5
1TC_YMC 4
P-GND 2
INT24V2 1
B7P-PH-K-S
MC-K
GB-K
BS-K
GB-C
BS-C
GB-M
BS-M
GB-Y
BS-Y
1st TC PWB
CN1
INT24V2 7
P-GND 6
1TC_YMC 4
1TC_K 3
MC_YMC 2
HV_REM 1
1TC_CL 5
B7P-PH-K-S
MC-CMY
1TC-K
1TC-CMY
(SPRING)
(SPRING)
(SPRING)
(SPRING)
(SPRING)
(SPRING)
(SPRING)
(SPRING)
GB-K
BS-K
GB-C
BS-C
GB-M
BS-M
GB-Y
BS-Y
1TUD_K
(Transfer separation sensor BK)
1TUD_K 1
D-GND 2
5VLED 3
1TUD_CL
(Transfer separation sensor CL)
1TUD_CL 1
D-GND 2
5VLED 3
(Secondary transfer separation harness)
(MC-BK harness)
(MC interface harness)
(MC interface harness)
(MC harness)
(Primary transfer harness PA)
2-TC
MC-K
MC-C
MC-M
MC-M
MC-Y
MC-Y
1TC-K
1TC-CMY

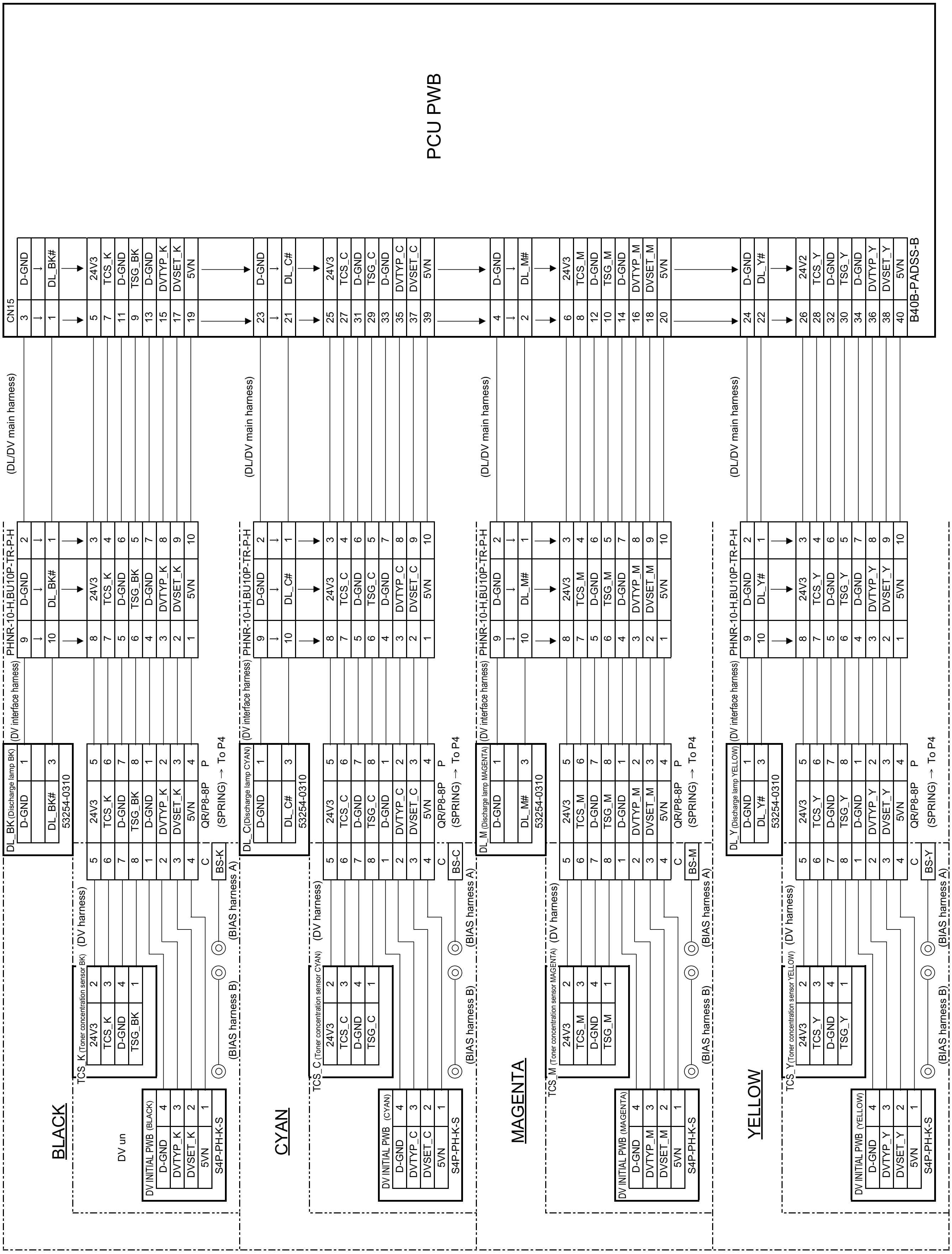
E. Main drive unit section 1/2 (P5)


CRUM(BLACK)
2 5V_CRUM
4 CRM_K_DT#
3 CRM_K_CK#
1 D-GND
CRUM(CYAN)
2 5V_CRUM
4 CRM_C_DT#
3 CRM_C_CK#
1 D-GND
CRUM(MAGENTA)
2 5V_CRUM
4 CRM_M_DT#
3 CRM_M_CK#
1 D-GND
CRUM(YELLOW)
2 5V_CRUM
4 CRM_Y_DT#
3 CRM_Y_CK#
1 D-GND
(CRUM harness)
6 D-GND
2 D-GND
1 D-GND
3 D-GND
4 D-GND
5 D-GND
DF11-6DP-SP1
6 5V-CRU
2 5V-CRU
1 5V-CRU
3 5V-CRU
4 5V-CRU
5 5V-CRU
DF11-6DP-SP1
(Upper main harness PA)
1 5V_CRUM 1
2 CRM_K_DT# 2
3 CRM_K_CK# 3
4 D-GND 4
5 CRM_C_DT# 5
6 CRM_C_CK# 6
7 CRM_M_DT# 7
8 CRM_M_CK# 8
9 CRM_Y_DT# 9
10 CRM_Y_CK# 10
P SM10P R
CN5
5V_CRUM 1
CRM_K_DT# 3
CRM_K_CK# 5
D-GND 7
CRM_C_DT# 2
CRM_C_CK# 4
CRM_M_DT# 9
CRM_M_CK# 10
CRM_Y_DT# 6
CRM_Y_CK# 8
B10B-PHDSS-B
PCU PWB
CN12
6 INT24V2
4 P-GND
10 /DVM_K_CK
12 /DVM_K_D
2 DVM_K_LD
15 TNM_K_1
17 TNM_K_2
19 TNM_C_1
21 TNM_C_2
22 TNM_M_1
24 TNM_M_2
18 TNM_Y_1
20 TNM_Y_2
5 INT24V2
3 P-GND
9 /DVM_CL_CK
11 /DVM_CL_D
1 DVM_CL_LD
16 24V3
14 /1TURC
32 DHPD_K
30 5VLED
31 DHPD_CL
29 5VLED
23 D-GND
B32B-PHDSS-B
PHNR-02-H + BU02P-TR-P-H
1 24V3 2
2 /1TURC 1
1 D-GND
4 D-GND
3 D-GND
2 D-GND
DF11-4DP-SP1
(Process drive harness PA)
R SM2P P
1 TNM_K_1 1
2 TNM_K_2 2
R SM2P P
1 TNM_C_1 1
2 TNM_C_2 2
R SM2P P
1 TNM_M_1 1
2 TNM_M_2 2
R SM2P P
1 TNM_Y_1 1
2 TNM_Y_2 2
1TURC
(Transfer separation clutch)
TNM_K
(Toner motor BK)
TNM_M
(Toner motor MAGENTA)
DVM_CL (DV motor CL)
INT24V2 1
P-GND 2
/DVM_CL_CK 4
/DVM_CL_D 5
DVM_CL_LD 6
5V 7
B7P-PH-K-S
DHPD_K
(Phase detection BK)
D-GND 1
DHPD_K 2
5VLED 3
DVM_K (DV motor BK)
INT24V2 1
P-GND 2
/DVM_K_CK 4
/DVM_K_D 5
DVM_K_LD 6
5V 7
B7P-PH-K-S
TNM_C
(Toner motor CYAN)
TNM_Y
(Toner motor YELLOW)
DHPD_CL
(Phase detection CL)
D-GND 1
DHPD_CL 2
5VLED 3

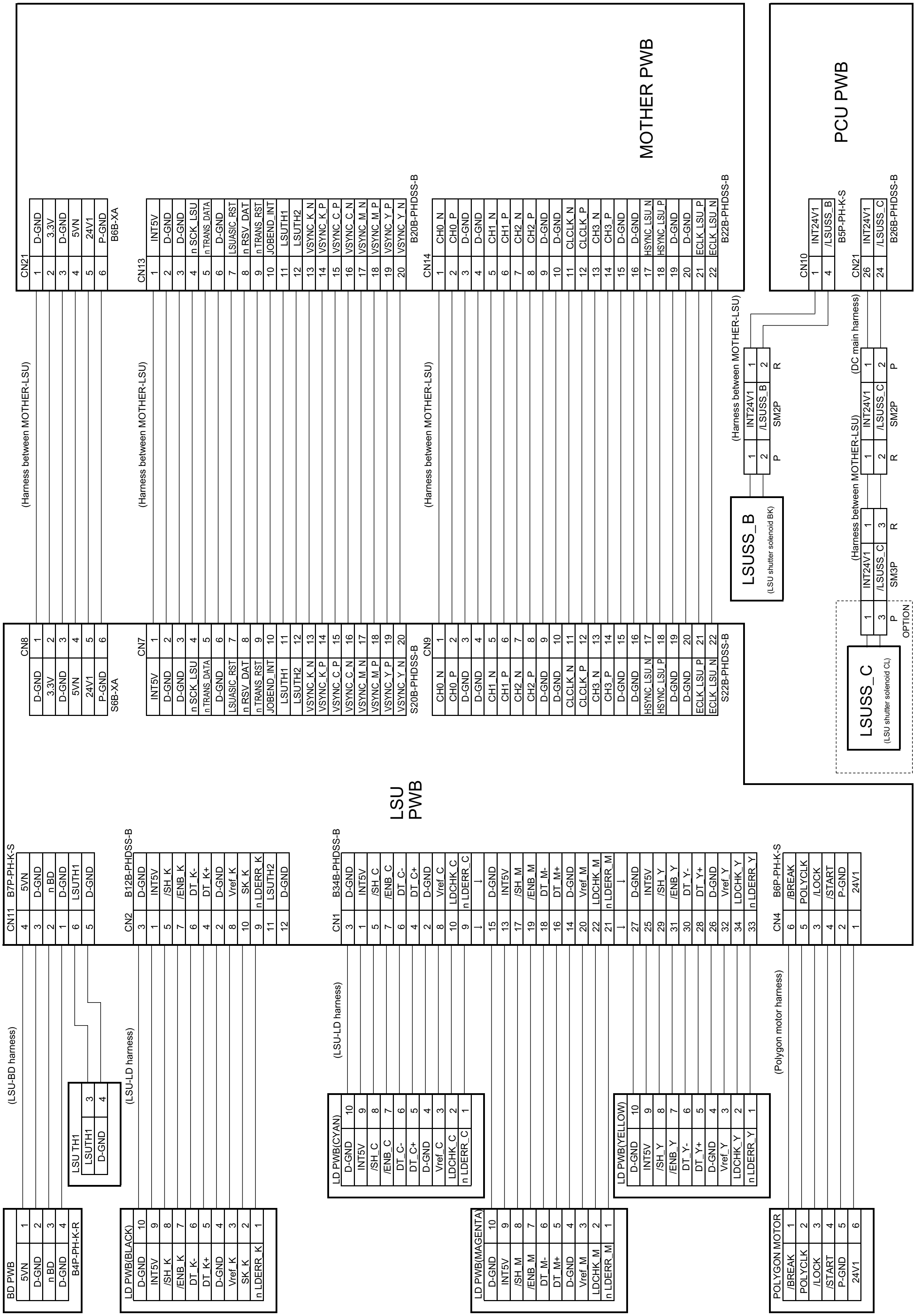
F. Main drive unit section 2/2 (P6)


DRIVER
SUB PWB
CN1
12 INT24V1
11 INT24V1
9 DMBKB//
10 DMBKB/
7 DMBKA/
8 DMBKA//
↓ ↓
3 DMCLB//
6 INT24V1
4 DMCLB/
1 DMCLA/
5 INT24V1
2 DMCLA//
B12B-PH-K-S
DRIVER MAIN PWB
CN5
5 INT24V1
1 PSMA/
4 PSMB/
2 PSMA//
3 PSMB//
6 INT24V1
B12B-PH-K-S
(Process drive harness PA)
(Paper feed main harness)
R
SM6
P
6 INT24V1 6
5 INT24V1 5
4 DMBKB// 4
3 DMBKB/ 3
2 DMBKA/ 2
1 DMBKA// 1
DMBK
(Drum motor BK)
PSM
(PS motor)
INT24V1 1
PSMA/ 2
PSMB/ 3
PSMA// 4
PSMB// 5
INT24V1 6
B6P-PH-K-R
DMCL
(Drum motor CL)
DMCLB// 1
INT24V1 2
DMCLB/ 3
DMCLA/ 4
INT24V1 5
DMCLA// 6

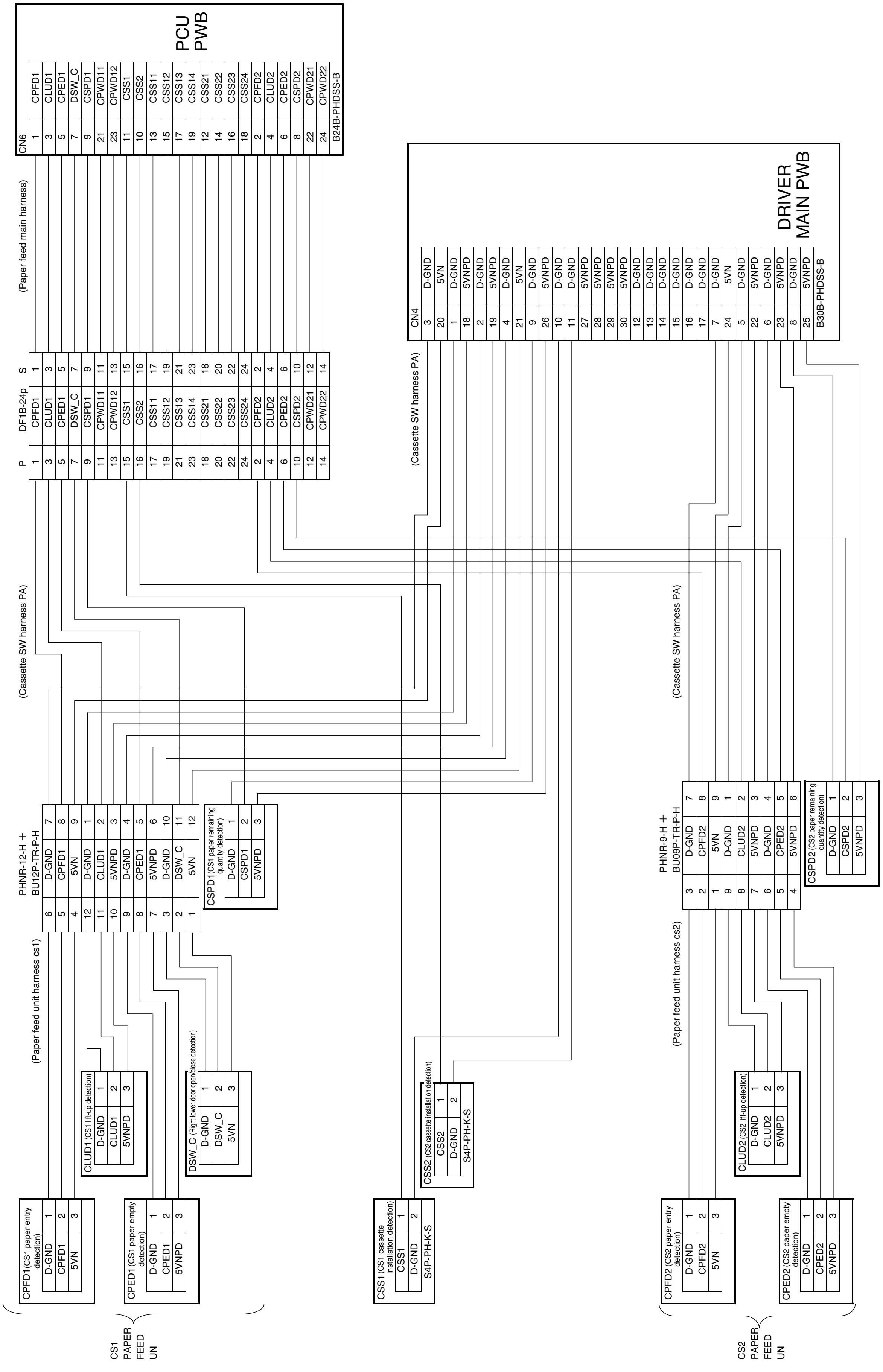
G. DL & DV section (P7)


PCU PWB
CN15
B40B-PADSS-B
3 D-GND
1 DL_BK#
5 24V3
7 TCS_K
11 D-GND
9 TSG_BK
13 D-GND
15 DVTYP_K
17 DVSET_K
19 5VN
23 D-GND
21 DL_C#
25 24V3
27 TCS_C
31 D-GND
29 TSG_C
33 D-GND
35 DVTYP_C
37 DVSET_C
39 5VN
4 D-GND
2 DL_M#
6 24V3
8 TCS_M
12 D-GND
10 TSG_M
14 D-GND
16 DVTYP_M
18 DVSET_M
20 5VN
24 D-GND
22 DL_Y#
26 24V2
28 TCS_Y
32 D-GND
30 TSG_Y
34 D-GND
36 DVTYP_Y
38 DVSET_Y
40 5VN
(DL/DV main harness)
PHNR-10-H,BU10P-TR-P-H
(DV interface harness)
DL_BK (Discharge lamp BK)
DL_C (Discharge lamp CYAN)
DL_M (Discharge lamp MAGENTA)
DL_Y (Discharge lamp YELLOW)
53254-0310
QR/P8-8P
(SPRING) → To P4
BS-K
BS-C
BS-M
BS-Y
(BIAS harness A)
(BIAS harness B)
(DV harness)
TCS_K (Toner concentration sensor BK)
TCS_C (Toner concentration sensor CYAN)
TCS_M (Toner concentration sensor MAGENTA)
TCS_Y (Toner concentration sensor YELLOW)
DV INITIAL PWB (BLACK)
DV INITIAL PWB (CYAN)
DV INITIAL PWB (MAGENTA)
DV INITIAL PWB (YELLOW)
S4P-PH-K-S
DV un
BLACK
CYAN
MAGENTA
YELLOW

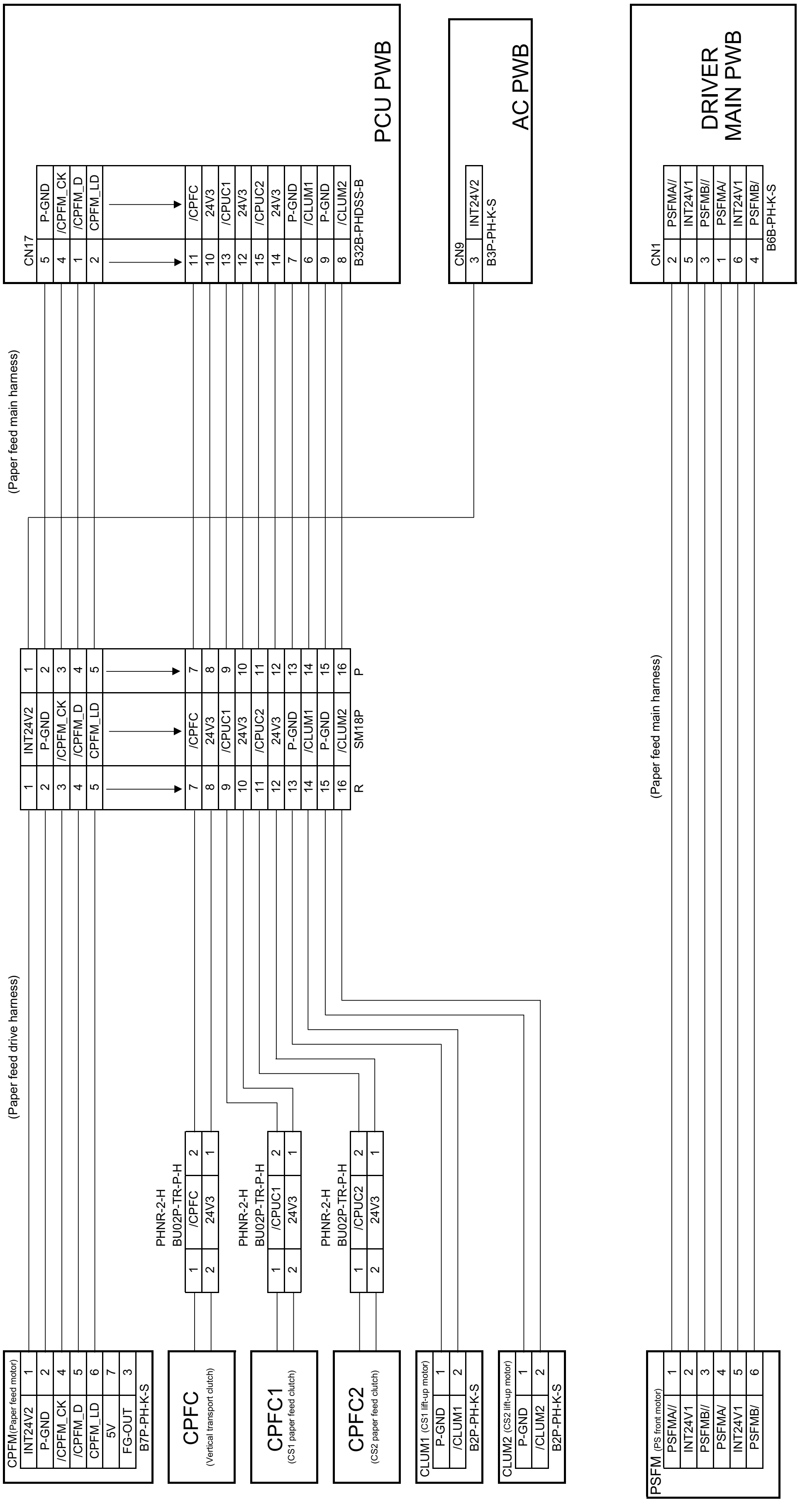
H. LSU section (P8)


MOTHER PWB
CN21
1 D-GND
2 3.3V
3 D-GND
4 5VN
5 24V1
6 P-GND
B6B-XA
CN13
1 INT5V
2 D-GND
3 D-GND
4 n SCK_LSU
5 n TRANS_DATA
6 D-GND
7 LSUASIC_RST
8 n RSV_DAT
9 n TRANS_RST
10 JOBEND_INT
11 LSUTH1
12 LSUTH2
13 VSYNC_K_N
14 VSYNC_K_P
15 VSYNC_C_P
16 VSYNC_C_N
17 VSYNC_M_N
18 VSYNC_M_P
19 VSYNC_Y_P
20 VSYNC_Y_N
B20B-PHDSS-B
CN14
1 CH0_N
2 CH0_P
3 D-GND
4 D-GND
5 CH1_N
6 CH1_P
7 CH2_N
8 CH2_P
9 D-GND
10 D-GND
11 CLCLK_N
12 CLCLK_P
13 CH3_N
14 CH3_P
15 D-GND
16 D-GND
17 HSYNC_LSU_N
18 HSYNC_LSU_P
19 D-GND
20 D-GND
21 ECLK_LSU_P
22 ECLK_LSU_N
B22B-PHDSS-B
PCU PWB
CN10
1 INT24V1
4 /LSUSS_B
B5P-PH-K-S
CN21
26 INT24V1
24 /LSUSS_C
B26B-PHDSS-B
(Harness between MOTHER-LSU)
(Harness between MOTHER-LSU)
(Harness between MOTHER-LSU)
(Harness between MOTHER-LSU)
1 INT24V1 1
2 /LSUSS_B 2
P SM2P R
(DC main harness)
(Harness between MOTHER-LSU)
1 INT24V1 1
2 /LSUSS_C 2
R SM2P P
(Harness between MOTHER-LSU)
1 INT24V1 1
3 /LSUSS_C 3
P SM3P R
LSUSS_B
(LSU shutter solenoid BK)
LSUSS_C
(LSU shutter solenoid CL)
OPTION
LSU PWB
CN8
D-GND 1
3.3V 2
D-GND 3
5VN 4
24V1 5
P-GND 6
S6B-XA
CN7
INT5V 1
D-GND 2
D-GND 3
n SCK_LSU 4
n TRANS_DATA 5
D-GND 6
LSUASIC_RST 7
n RSV_DAT 8
n TRANS_RST 9
JOBEND_INT 10
LSUTH1 11
LSUTH2 12
VSYNC_K_N 13
VSYNC_K_P 14
VSYNC_C_P 15
VSYNC_C_N 16
VSYNC_M_N 17
VSYNC_M_P 18
VSYNC_Y_P 19
VSYNC_Y_N 20
S20B-PHDSS-B
CN9
CH0_N 1
CH0_P 2
D-GND 3
D-GND 4
CH1_N 5
CH1_P 6
CH2_N 7
CH2_P 8
D-GND 9
D-GND 10
CLCLK_N 11
CLCLK_P 12
CH3_N 13
CH3_P 14
D-GND 15
D-GND 16
HSYNC_LSU_N 17
HSYNC_LSU_P 18
D-GND 19
D-GND 20
ECLK_LSU_P 21
ECLK_LSU_N 22
S22B-PHDSS-B
CN11 B7P-PH-K-S
4 5VN
3 D-GND
2 n BD
1 D-GND
6 LSUTH1
5 D-GND
CN2 B12B-PHDSS-B
3 D-GND
1 INT5V
5 /SH_K
7 /ENB_K
6 DT_K-
4 DT_K+
2 D-GND
8 Vref_K
10 SK_K
9 n LDERR_K
11 LSUTH2
12 D-GND
CN1 B34B-PHDSS-B
3 D-GND
1 INT5V
5 /SH_C
7 /ENB_C
6 DT_C-
4 DT_C+
2 D-GND
8 Vref_C
10 LDCHK_C
9 n LDERR_C
15 D-GND
13 INT5V
17 /SH_M
19 /ENB_M
18 DT_M-
16 DT_M+
14 D-GND
20 Vref_M
22 LDCHK_M
21 n LDERR_M
27 D-GND
25 INT5V
29 /SH_Y
31 /ENB_Y
30 DT_Y-
28 DT_Y+
26 D-GND
32 Vref_Y
34 LDCHK_Y
33 n LDERR_Y
CN4 B6P-PH-K-S
6 /BREAK
5 POLYCLK
3 /LOCK
4 /START
2 P-GND
1 24V1
(LSU-BD harness)
(LSU-LD harness)
(LSU-LD harness)
(Polygon motor harness)
LSU TH1
LSUTH1 3
D-GND 4
BD PWB
5VN 1
D-GND 2
n BD 3
D-GND 4
B4P-PH-K-R
LD PWB(BLACK)
D-GND 10
INT5V 9
/SH_K 8
/ENB_K 7
DT_K- 6
DT_K+ 5
D-GND 4
Vref_K 3
SK_K 2
n LDERR_K 1
LD PWB(CYAN)
D-GND 10
INT5V 9
/SH_C 8
/ENB_C 7
DT_C- 6
DT_C+ 5
D-GND 4
Vref_C 3
LDCHK_C 2
n LDERR_C 1
LD PWB(MAGENTA)
D-GND 10
INT5V 9
/SH_M 8
/ENB_M 7
DT_M- 6
DT_M+ 5
D-GND 4
Vref_M 3
LDCHK_M 2
n LDERR_M 1
LD PWB(YELLOW)
D-GND 10
INT5V 9
/SH_Y 8
/ENB_Y 7
DT_Y- 6
DT_Y+ 5
D-GND 4
Vref_Y 3
LDCHK_Y 2
n LDERR_Y 1
POLYGON MOTOR
/BREAK 1
POLYCLK 2
/LOCK 3
/START 4
P-GND 5
24V1 6

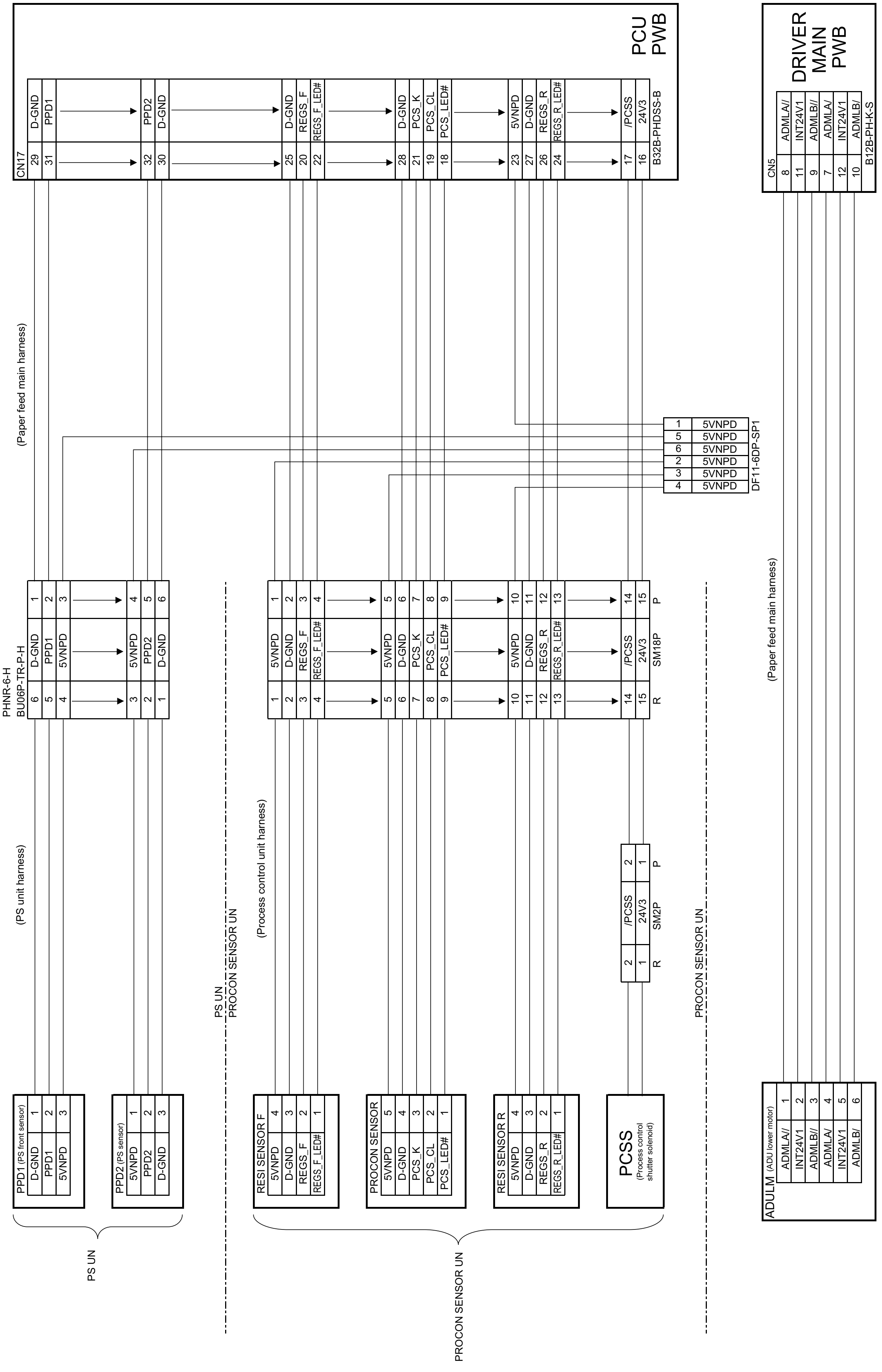
I. Paper feed unit section (P9)


PCU PWB
CN6
B24B-PHDSS-B
1 CPFD1
3 CLUD1
5 CPED1
7 DSW_C
9 CSPD1
21 CPWD11
23 CPWD12
11 CSS1
10 CSS2
13 CSS11
15 CSS12
17 CSS13
19 CSS14
12 CSS21
14 CSS22
16 CSS23
18 CSS24
2 CPFD2
4 CLUD2
6 CPED2
8 CSPD2
22 CPWD21
24 CPWD22
(Paper feed main harness)
P DF1B-24p S
(Cassette SW harness PA)
DRIVER MAIN PWB
CN4
B30B-PHDSS-B
3 D-GND
20 5VN
1 D-GND
18 5VNPD
2 D-GND
19 5VNPD
4 D-GND
21 5VN
9 D-GND
26 5VNPD
10 D-GND
11 D-GND
27 5VNPD
28 5VNPD
29 5VNPD
30 5VNPD
12 D-GND
13 D-GND
14 D-GND
15 D-GND
16 D-GND
17 D-GND
7 D-GND
24 5VN
5 D-GND
22 5VNPD
6 D-GND
23 5VNPD
8 D-GND
25 5VNPD
PHNR-12-H + BU12P-TR-P-H
(Paper feed unit harness cs1)
CSPD1 (CS1 paper remaining quantity detection)
CLUD1 (CS1 lift-up detection)
DSW_C (Right lower door open/close detection)
CSS2 (CS2 cassette installation detection)
S4P-PH-K-S
CPFD1 (CS1 paper entry detection)
CPED1 (CS1 paper empty detection)
CSS1 (CS1 cassette installation detection)
CS1 PAPER FEED UN
PHNR-9-H + BU09P-TR-P-H
(Paper feed unit harness cs2)
CSPD2 (CS2 paper remaining quantity detection)
CLUD2 (CS2 lift-up detection)
CPFD2 (CS2 paper entry detection)
CPED2 (CS2 paper empty detection)
CS2 PAPER FEED UN

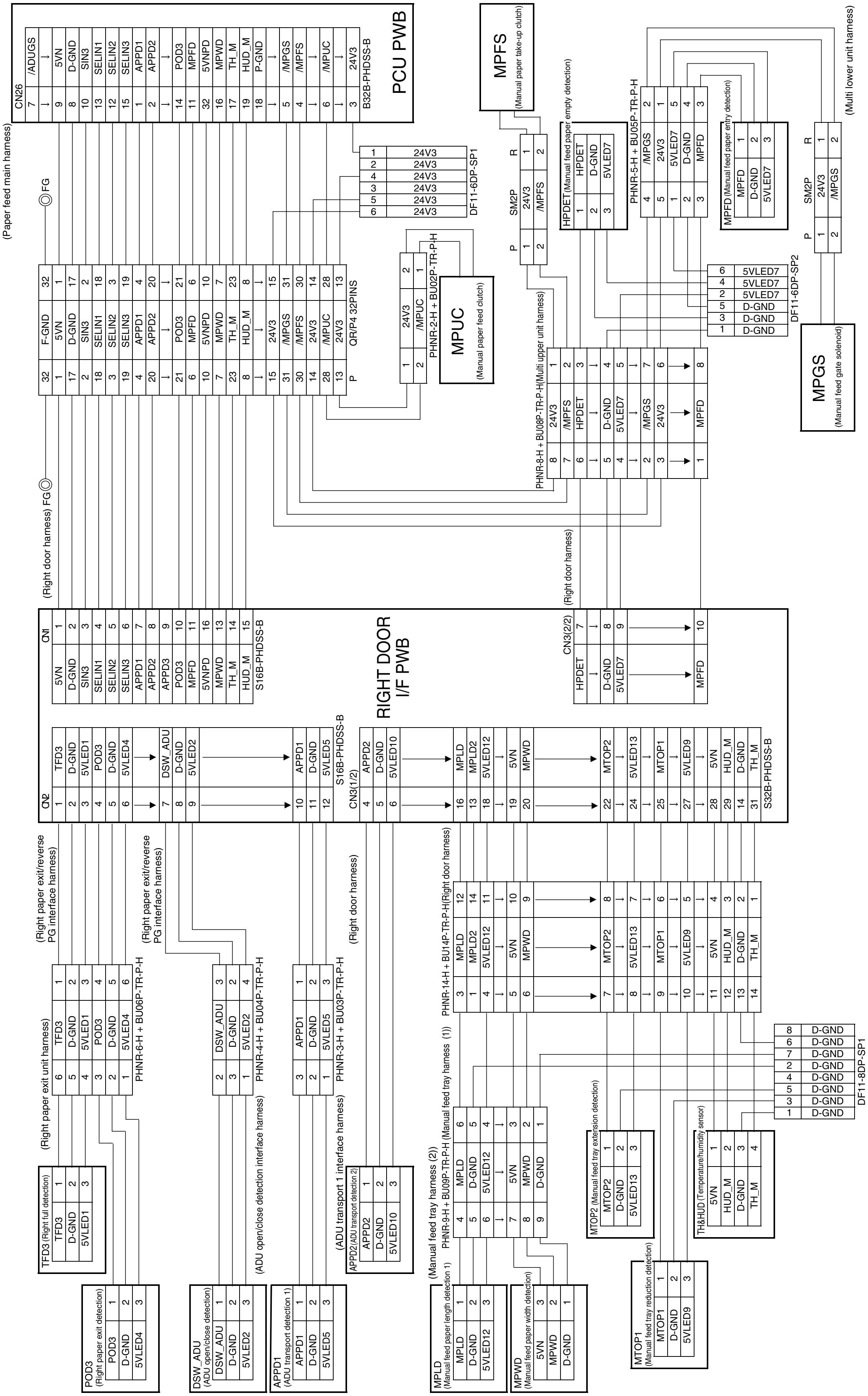
J. Paper feed drive unit section (P10)


PCU PWB
CN17
5 P-GND
4 /CPFM_CK
1 /CPFM_D
2 CPFM_LD
11 /CPFC
10 24V3
13 /CPUC1
12 24V3
15 /CPUC2
14 24V3
7 P-GND
6 /CLUM1
9 P-GND
8 /CLUM2
B32B-PHDSS-B
AC PWB
CN9
3 INT24V2
B3P-PH-K-S
DRIVER MAIN PWB
CN1
2 PSFMA//
5 INT24V1
3 PSFMB//
1 PSFMA/
6 INT24V1
4 PSFMB/
B6B-PH-K-S
(Paper feed main harness)
(Paper feed main harness)
(Paper feed drive harness)
1 INT24V2 1
2 P-GND 2
3 /CPFM_CK 3
4 /CPFM_D 4
5 CPFM_LD 5
7 /CPFC 7
8 24V3 8
9 /CPUC1 9
10 24V3 10
11 /CPUC2 11
12 24V3 12
13 P-GND 13
14 /CLUM1 14
15 P-GND 15
16 /CLUM2 16
R SM18P P
PHNR-2-H
BU02P-TR-P-H
1 /CPFC 2
2 24V3 1
PHNR-2-H
BU02P-TR-P-H
1 /CPUC1 2
2 24V3 1
PHNR-2-H
BU02P-TR-P-H
1 /CPUC2 2
2 24V3 1
CPFM(Paper feed motor)
INT24V2 1
P-GND 2
/CPFM_CK 4
/CPFM_D 5
CPFM_LD 6
5V 7
FG-OUT 3
B7P-PH-K-S
CPFC
(Vertical transport clutch)
CPFC1
(CS1 paper feed clutch)
CPFC2
(CS2 paper feed clutch)
CLUM1 (CS1 lift-up motor)
P-GND 1
/CLUM1 2
B2P-PH-K-S
CLUM2 (CS2 lift-up motor)
P-GND 1
/CLUM2 2
B2P-PH-K-S
PSFM (PS front motor)
PSFMA// 1
INT24V1 2
PSFMB// 3
PSFMA/ 4
INT24V1 5
PSFMB/ 6

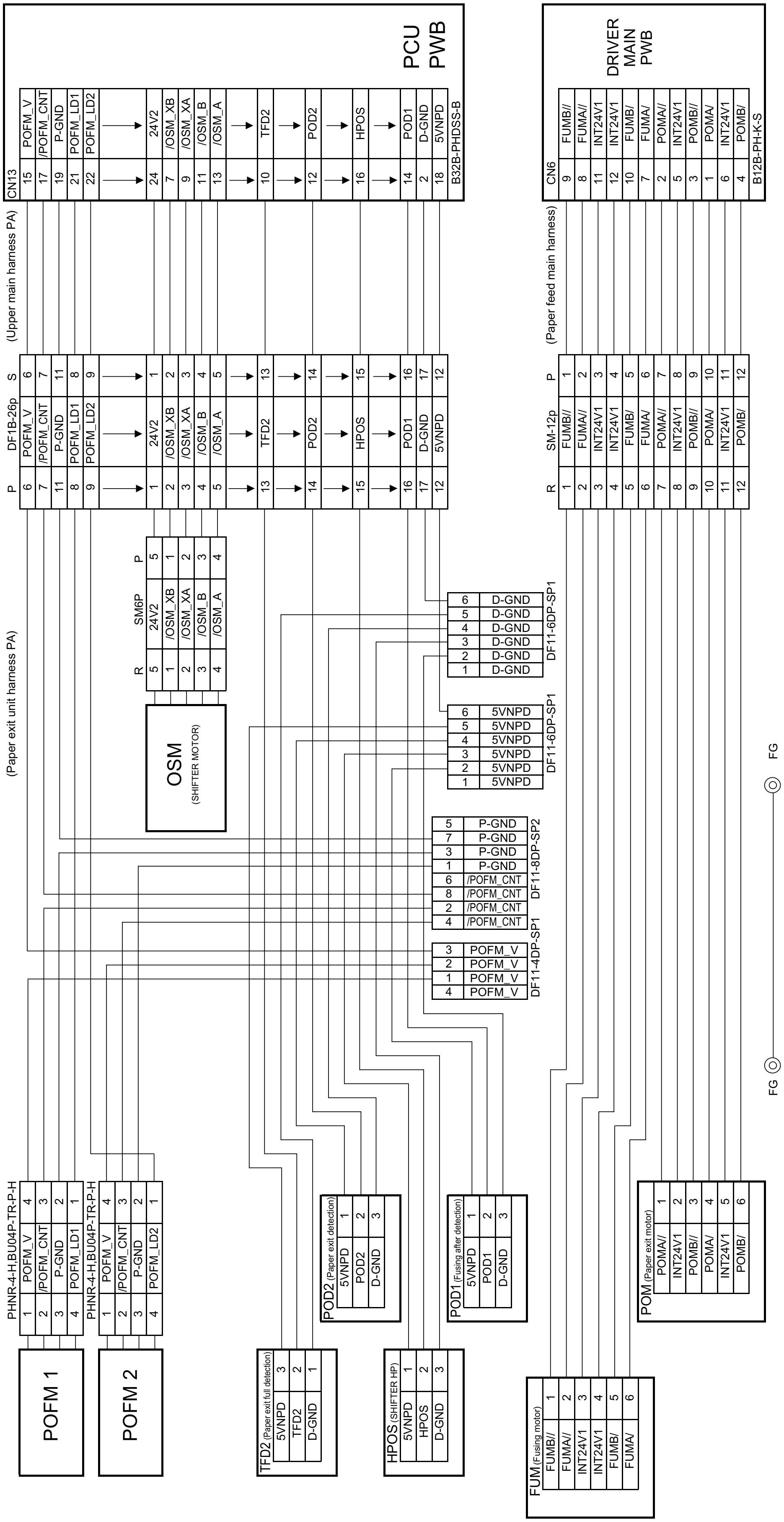
K. PS unit & process control unit section (P11)


PCU PWB
CN17
29 D-GND
31 PPD1
32 PPD2
30 D-GND
25 D-GND
20 REGS_F
22 REGS_F_LED#
28 D-GND
21 PCS_K
19 PCS_CL
18 PCS_LED#
23 5VNPD
27 D-GND
26 REGS_R
24 REGS_R_LED#
17 /PCSS
16 24V3
B32B-PHDSS-B
DRIVER MAIN PWB
CN5
8 ADMLA//
11 INT24V1
9 ADMLB//
7 ADMLA/
12 INT24V1
10 ADMLB/
B12B-PH-K-S
(Paper feed main harness)
1 5VNPD
5 5VNPD
6 5VNPD
2 5VNPD
3 5VNPD
4 5VNPD
DF11-6DP-SP1
PHNR-6-H
BU06P-TR-P-H
6 D-GND 1
5 PPD1 2
4 5VNPD 3
3 5VNPD 4
2 PPD2 5
1 D-GND 6
1 5VNPD 1
2 D-GND 2
3 REGS_F 3
4 REGS_F_LED# 4
5 5VNPD 5
6 D-GND 6
7 PCS_K 7
8 PCS_CL 8
9 PCS_LED# 9
10 5VNPD 10
11 D-GND 11
12 REGS_R 12
13 REGS_R_LED# 13
14 /PCSS 14
15 24V3 15
R SM18P P
(Paper feed main harness)
(PS unit harness)
(Process control unit harness)
PS UN
PROCON SENSOR UN
2 /PCSS 2
1 24V3 1
R SM2P P
PROCON SENSOR UN
PPD1 (PS front sensor)
D-GND 1
PPD1 2
5VNPD 3
PPD2 (PS sensor)
5VNPD 1
PPD2 2
D-GND 3
RESI SENSOR F
5VNPD 4
D-GND 3
REGS_F 2
REGS_F_LED# 1
PROCON SENSOR
5VNPD 5
D-GND 4
PCS_K 3
PCS_CL 2
PCS_LED# 1
RESI SENSOR R
5VNPD 4
D-GND 3
REGS_R 2
REGS_R_LED# 1
PCSS
(Process control shutter solenoid)
ADULM (ADU lower motor)
ADMLA// 1
INT24V1 2
ADMLB// 3
ADMLA/ 4
INT24V1 5
ADMLB/ 6
PS UN
PROCON SENSOR UN

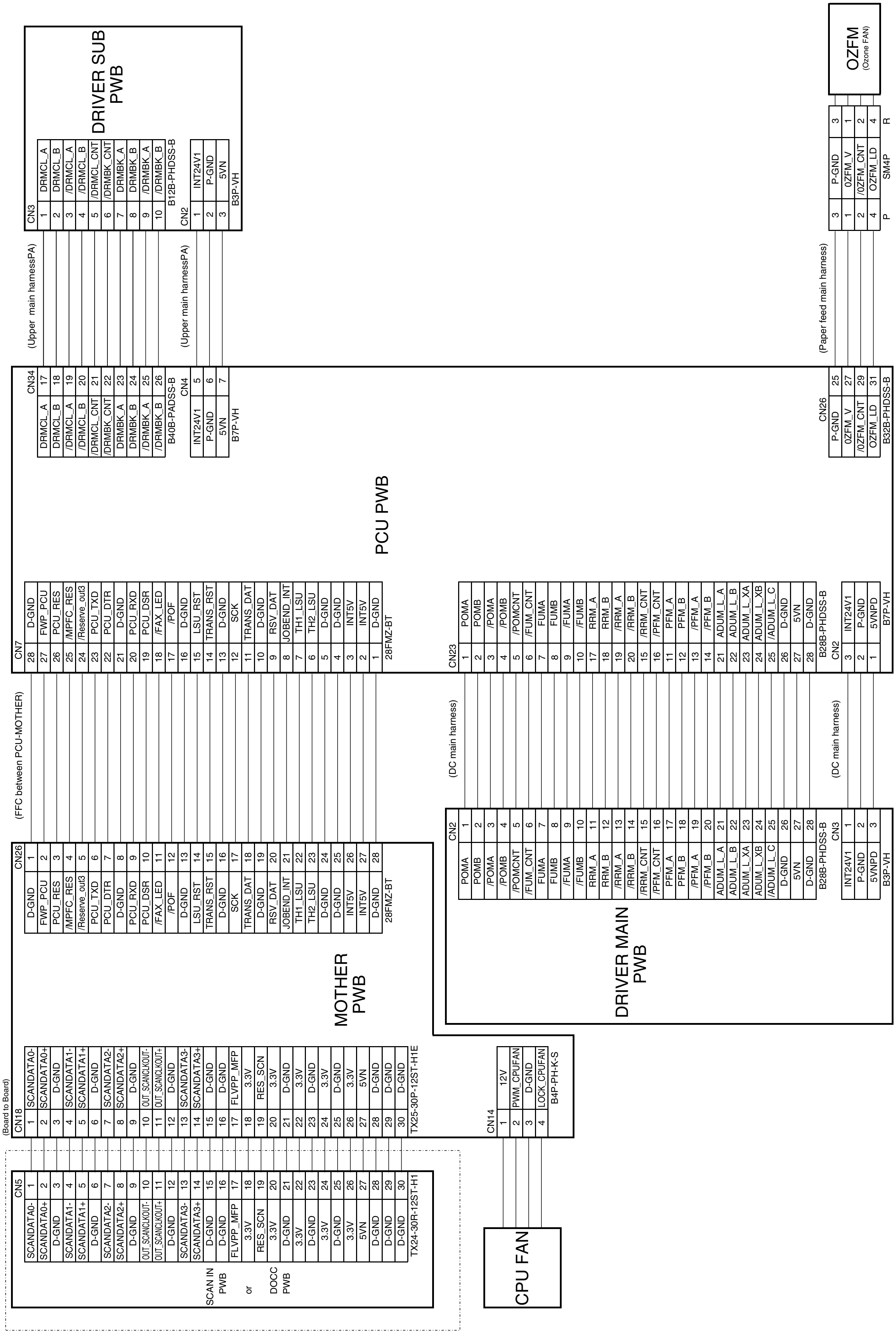
L. Right door unit section (P12)


PCU PWB
CN26
B32B-PHDSS-B
(Paper feed main harness)
FG
DF11-6DP-SP1
24V3
QR/P4 32PINS
F-GND
MPUC
(Manual paper feed clutch)
PHNR-2-H + BU02P-TR-P-H
MPFS
(Manual paper take-up clutch)
SM2P
HPDET (Manual feed paper empty detection)
PHNR-5-H + BU05P-TR-P-H
MPFD (Manual feed paper entry detection)
(Multi lower unit harness)
DF11-6DP-SP2
MPGS
(Manual feed gate solenoid)
PHNR-8-H + BU08P-TR-P-H(Multi upper unit harness)
(Right door harness)
RIGHT DOOR I/F PWB
CN1
S16B-PHDSS-B
CN2
CN3(1/2)
CN3(2/2)
S32B-PHDSS-B
5VN
D-GND
SIN3
SELIN1
SELIN2
SELIN3
APPD1
APPD2
APPD3
POD3
MPFD
5VNPD
MPWD
TH_M
HUD_M
P-GND
/MPGS
/MPFS
/MPUC
/ADUGS
TFD3
5VLED1
5VLED4
DSW_ADU
5VLED2
5VLED5
5VLED10
MPLD
MPLD2
5VLED12
MTOP2
5VLED13
MTOP1
5VLED9
5VLED7
HPDET
(Right paper exit/reverse PG interface harness)
(Right paper exit unit harness)
PHNR-6-H + BU06P-TR-P-H
PHNR-4-H + BU04P-TR-P-H
PHNR-3-H + BU03P-TR-P-H
(ADU open/close detection interface harness)
(ADU transport 1 interface harness)
PHNR-14-H + BU14P-TR-P-H(Right door harness)
(Manual feed tray harness (1))
(Manual feed tray harness (2))
PHNR-9-H + BU09P-TR-P-H
DF11-8DP-SP1
TFD3 (Right full detection)
POD3 (Right paper exit detection)
DSW_ADU (ADU open/close detection)
APPD1 (ADU transport detection 1)
APPD2 (ADU transport detection 2)
MPLD (Manual feed paper length detection 1)
MPWD (Manual feed paper width detection)
MTOP1 (Manual feed tray reduction detection)
MTOP2 (Manual feed tray extension detection)
TH&HUD (Temperature/humidity sensor)

M. Paper out unit section (P13)

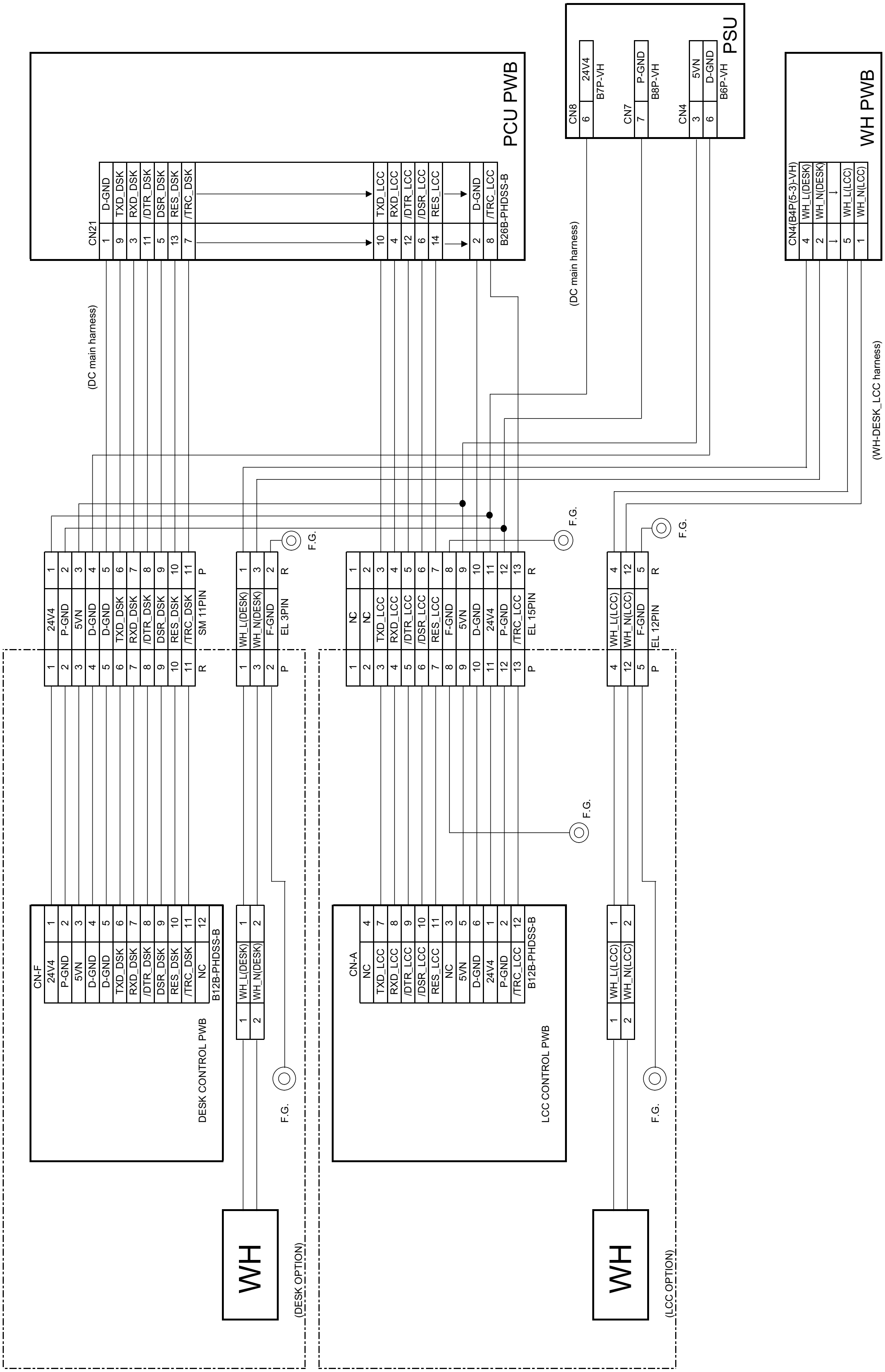

PCU PWB
CN13
15 POFM_V
17 /POFM_CNT
19 P-GND
21 POFM_LD1
22 POFM_LD2
24 24V2
7 /OSM_XB
9 /OSM_XA
11 /OSM_B
13 /OSM_A
10 TFD2
12 POD2
16 HPOS
14 POD1
2 D-GND
18 5VNPD
B32B-PHDSS-B
DRIVER MAIN PWB
CN6
9 FUMB//
8 FUMA//
11 INT24V1
12 INT24V1
10 FUMB/
7 FUMA/
2 POMA//
5 INT24V1
3 POMB//
1 POMA/
6 INT24V1
4 POMB/
B12B-PH-K-S
(Upper main harness PA)
(Paper feed main harness)
P DF1B-26p S
POFM_V
/POFM_CNT
P-GND
POFM_LD1
POFM_LD2
24V2
/OSM_XB
/OSM_XA
/OSM_B
/OSM_A
TFD2
POD2
HPOS
POD1
D-GND
5VNPD
R SM-12p P
FUMB//
FUMA//
INT24V1
INT24V1
FUMB/
FUMA/
POMA//
INT24V1
POMB//
POMA/
INT24V1
POMB/
(Paper exit unit harness PA)
R SM6P P
24V2
/OSM_XB
/OSM_XA
/OSM_B
/OSM_A
OSM
(SHIFTER MOTOR)
DF11-6DP-SP1
6 D-GND
5 D-GND
4 D-GND
3 D-GND
2 D-GND
1 D-GND
DF11-6DP-SP1
6 5VNPD
5 5VNPD
4 5VNPD
3 5VNPD
2 5VNPD
1 5VNPD
DF11-8DP-SP2
5 P-GND
7 P-GND
3 P-GND
1 P-GND
6 /POFM_CNT
8 /POFM_CNT
2 /POFM_CNT
4 /POFM_CNT
DF11-4DP-SP1
3 POFM_V
2 POFM_V
1 POFM_V
4 POFM_V
FG
FG
PHNR-4-H,BU04P-TR-P-H
1 POFM_V 4
2 /POFM_CNT 3
3 P-GND 2
4 POFM_LD1 1
PHNR-4-H,BU04P-TR-P-H
1 POFM_V 4
2 /POFM_CNT 3
3 P-GND 2
4 POFM_LD2 1
POFM 1
POFM 2
POD2 (Paper exit detection)
5VNPD 1
POD2 2
D-GND 3
POD1 (Fusing after detection)
5VNPD 1
POD1 2
D-GND 3
POM (Paper exit motor)
POMA// 1
INT24V1 2
POMB// 3
POMA/ 4
INT24V1 5
POMB/ 6
TFD2 (Paper exit full detection)
5VNPD 3
TFD2 2
D-GND 1
HPOS (SHIFTER HP)
5VNPD 1
HPOS 2
D-GND 3
FUM (Fusing motor)
FUMB// 1
FUMA// 2
INT24V1 3
INT24V1 4
FUMB/ 5
FUMA/ 6

N. PCU PWB-other PWB (P14)

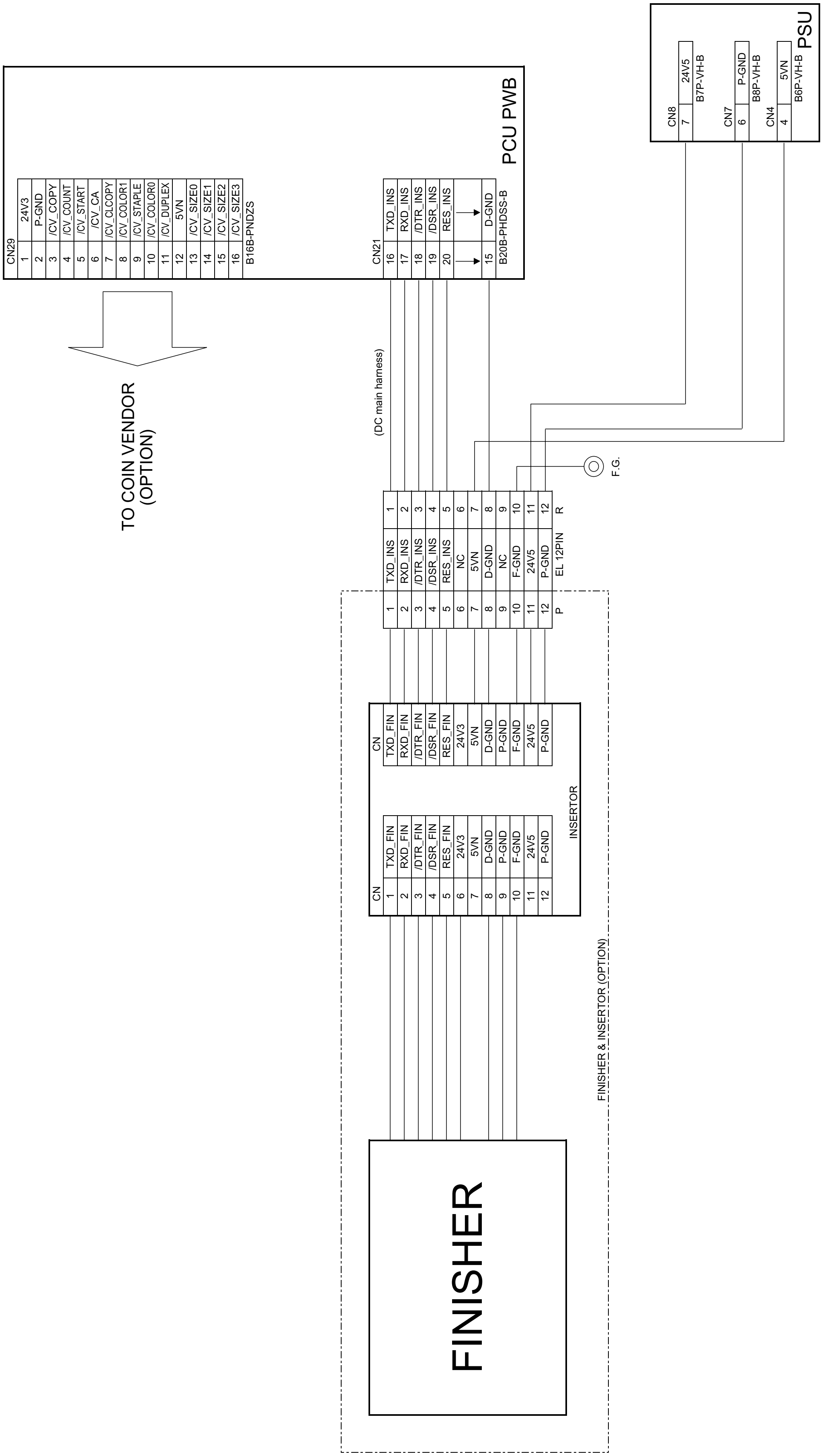


DRIVER SUB PWB
CN3
1 DRMCL_A
2 DRMCL_B
3 /DRMCL_A
4 /DRMCL_B
5 /DRMCL_CNT
6 /DRMBK_CNT
7 DRMBK_A
8 DRMBK_B
9 /DRMBK_A
10 /DRMBK_B
B12B-PHDSS-B
CN2
1 INT24V1
2 P-GND
3 5VN
B3P-VH
(Upper main harnessPA)
(Upper main harnessPA)
PCU PWB
CN34
DRMCL_A 17
DRMCL_B 18
/DRMCL_A 19
/DRMCL_B 20
/DRMCL_CNT 21
/DRMBK_CNT 22
DRMBK_A 23
DRMBK_B 24
/DRMBK_A 25
/DRMBK_B 26
B40B-PADSS-B
CN4
INT24V1 5
P-GND 6
5VN 7
B7P-VH
OZFM (Ozone FAN)
3 P-GND 3
1 0ZFM_V 1
2 /0ZFM_CNT 2
4 OZFM_LD 4
P SM4P R
(Paper feed main harness)
CN26
P-GND 25
0ZFM_V 27
/0ZFM_CNT 29
OZFM_LD 31
B32B-PHDSS-B
CN7
28 D-GND
27 FWP_PCU
26 PCU_RES
25 /MPFC_RES
24 /Reserve_out3
23 PCU_TXD
22 PCU_DTR
21 D-GND
20 PCU_RXD
19 PCU_DSR
18 /FAX_LED
17 /POF
16 D-GND
15 LSU_RST
14 TRANS_RST
13 D-GND
12 SCK
11 TRANS_DAT
10 D-GND
9 RSV_DAT
8 JOBEND_INT
7 TH1_LSU
6 TH2_LSU
5 D-GND
4 D-GND
3 INT5V
2 INT5V
1 D-GND
28FMZ-BT
(FFC between PCU-MOTHER)
CN23
1 POMA
2 POMB
3 /POMA
4 /POMB
5 /POMCNT
6 /FUM_CNT
7 FUMA
8 FUMB
9 /FUMA
10 /FUMB
17 RRM_A
18 RRM_B
19 /RRM_A
20 /RRM_B
15 /RRM_CNT
16 /PFM_CNT
11 PFM_A
12 PFM_B
13 /PFM_A
14 /PFM_B
21 ADUM_L_A
22 ADUM_L_B
23 ADUM_L_XA
24 ADUM_L_XB
25 /ADUM_L_C
26 D-GND
27 5VN
28 D-GND
B28B-PHDSS-B
CN2
3 INT24V1
2 P-GND
1 5VNPD
B7P-VH
(DC main harness)
(DC main harness)
MOTHER PWB
CN26
D-GND 1
FWP_PCU 2
PCU_RES 3
/MPFC_RES 4
/Reserve_out3 5
PCU_TXD 6
PCU_DTR 7
D-GND 8
PCU_RXD 9
PCU_DSR 10
/FAX_LED 11
/POF 12
D-GND 13
LSU_RST 14
TRANS_RST 15
D-GND 16
SCK 17
TRANS_DAT 18
D-GND 19
RSV_DAT 20
JOBEND_INT 21
TH1_LSU 22
TH2_LSU 23
D-GND 24
D-GND 25
INT5V 26
INT5V 27
D-GND 28
28FMZ-BT
DRIVER MAIN PWB
CN2
POMA 1
POMB 2
/POMA 3
/POMB 4
/POMCNT 5
/FUM_CNT 6
FUMA 7
FUMB 8
/FUMA 9
/FUMB 10
RRM_A 11
RRM_B 12
/RRM_A 13
/RRM_B 14
/RRM_CNT 15
/PFM_CNT 16
PFM_A 17
PFM_B 18
/PFM_A 19
/PFM_B 20
ADUM_L_A 21
ADUM_L_B 22
ADUM_L_XA 23
ADUM_L_XB 24
/ADUM_L_C 25
D-GND 26
5VN 27
D-GND 28
B28B-PHDSS-B
CN3
INT24V1 1
P-GND 2
5VNPD 3
B3P-VH
(Board to Board)
CN18
1 SCANDATA0-
2 SCANDATA0+
3 D-GND
4 SCANDATA1-
5 SCANDATA1+
6 D-GND
7 SCANDATA2-
8 SCANDATA2+
9 D-GND
10 OUT_SCANCLKOUT-
11 OUT_SCANCLKOUT+
12 D-GND
13 SCANDATA3-
14 SCANDATA3+
15 D-GND
16 D-GND
17 FLVPP_MFP
18 3.3V
19 RES_SCN
20 3.3V
21 D-GND
22 3.3V
23 D-GND
24 3.3V
25 D-GND
26 3.3V
27 5VN
28 D-GND
29 D-GND
30 D-GND
TX25-30P-12ST-H1E
CN14
1 12V
2 PWM_CPUFAN
3 D-GND
4 LOCK_CPUFAN
B4P-PH-K-S
CN5
SCANDATA0- 1
SCANDATA0+ 2
D-GND 3
SCANDATA1- 4
SCANDATA1+ 5
D-GND 6
SCANDATA2- 7
SCANDATA2+ 8
D-GND 9
OUT_SCANCLKOUT- 10
OUT_SCANCLKOUT+ 11
D-GND 12
SCANDATA3- 13
SCANDATA3+ 14
D-GND 15
D-GND 16
FLVPP_MFP 17
3.3V 18
RES_SCN 19
3.3V 20
D-GND 21
3.3V 22
D-GND 23
3.3V 24
D-GND 25
3.3V 26
5VN 27
D-GND 28
D-GND 29
D-GND 30
TX24-30R-12ST-H1
SCAN IN PWB
or
DOCC PWB
CPU FAN

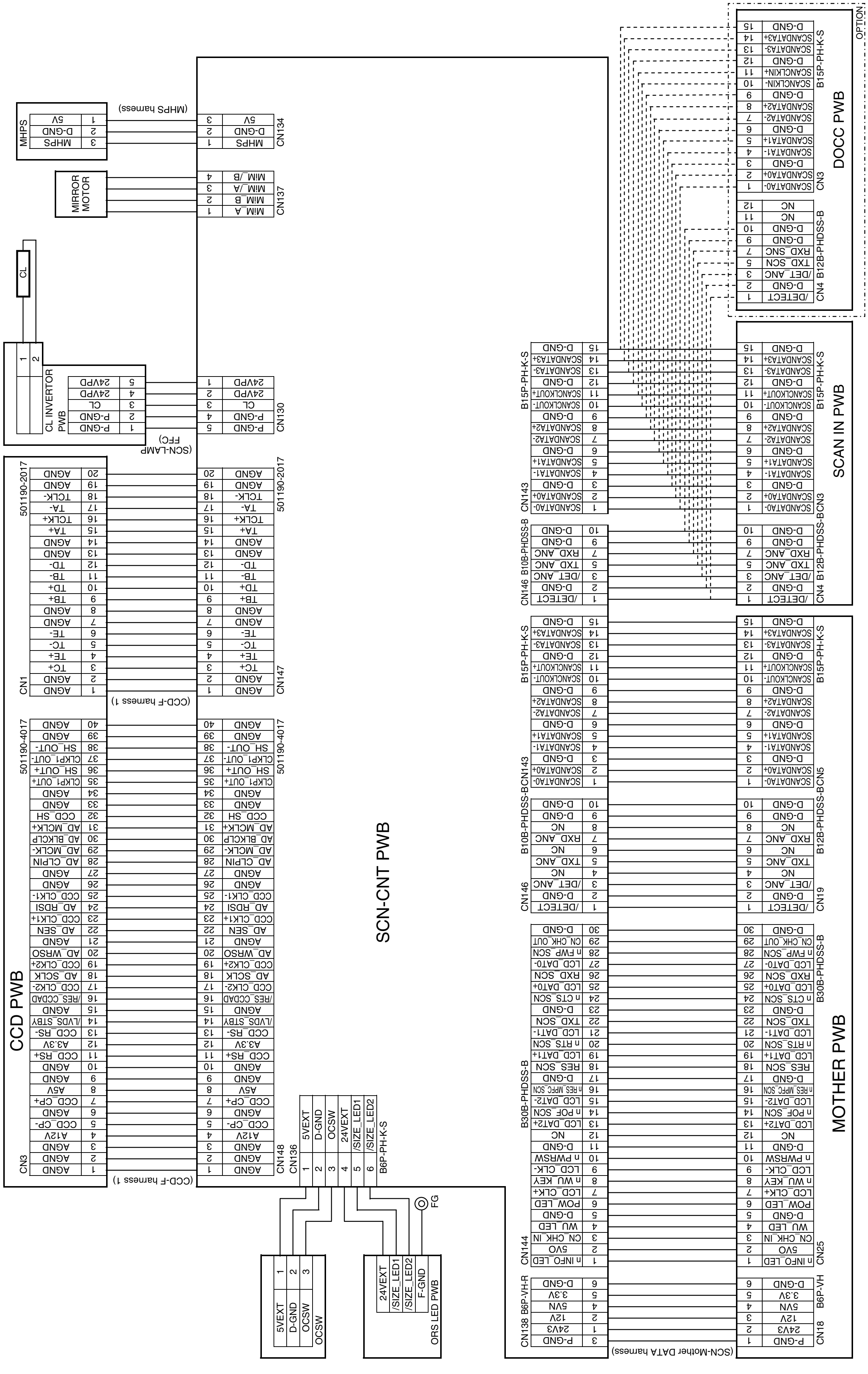
O. DESK & LCC (P15)


PCU PWB
CN21
B26B-PHDSS-B
D-GND
TXD_DSK
RXD_DSK
/DTR_DSK
DSR_DSK
RES_DSK
/TRC_DSK
TXD_LCC
RXD_LCC
/DTR_LCC
/DSR_LCC
RES_LCC
/TRC_LCC
PSU
CN8
24V4
B7P-VH
CN7
P-GND
B8P-VH
CN4
5VN
D-GND
B6P-VH
WH PWB
CN4(B4P(5-3)-VH)
WH_L(DESK)
WH_N(DESK)
WH_L(LCC)
WH_N(LCC)
(DC main harness)
(DC main harness)
(WH-DESK_LCC harness)
SM 11PIN
EL 3PIN
EL 15PIN
EL 12PIN
24V4
P-GND
5VN
NC
F-GND
F.G.
CN-F
B12B-PHDSS-B
DESK CONTROL PWB
CN-A
B12B-PHDSS-B
LCC CONTROL PWB
WH
WH
(DESK OPTION)
(LCC OPTION)

P. Finisher & coin vendor (P16)

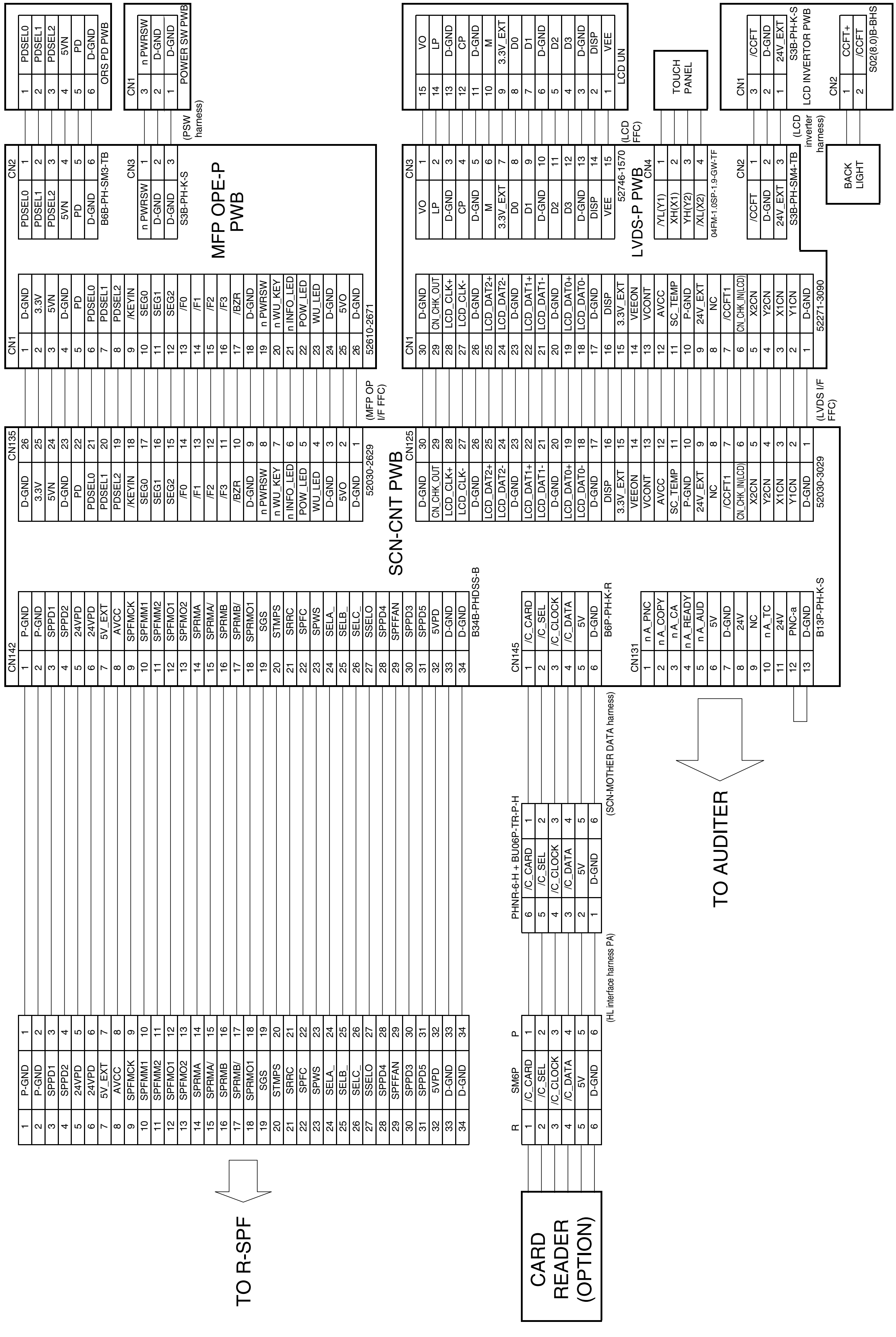

PCU PWB
CN29
1 24V3
2 P-GND
3 /CV_COPY
4 /CV_COUNT
5 /CV_START
6 /CV_CA
7 /CV_CLCOPY
8 /CV_COLOR1
9 /CV_STAPLE
10 /CV_COLOR0
11 /CV_DUPLEX
12 5VN
13 /CV_SIZE0
14 /CV_SIZE1
15 /CV_SIZE2
16 /CV_SIZE3
B16B-PNDZS
CN21
16 TXD_INS
17 RXD_INS
18 /DTR_INS
19 /DSR_INS
20 RES_INS
15 D-GND
B20B-PHDSS-B
TO COIN VENDOR (OPTION)
(DC main harness)
PSU
CN8 7 24V5 B7P-VH-B
CN7 6 P-GND B8P-VH-B
CN4 4 5VN B6P-VH-B
F.G.
R
P
EL 12PIN
1 TXD_INS
2 RXD_INS
3 /DTR_INS
4 /DSR_INS
5 RES_INS
6 NC
7 5VN
8 D-GND
9 NC
10 F-GND
11 24V5
12 P-GND
INSERTOR
CN
TXD_FIN
RXD_FIN
/DTR_FIN
/DSR_FIN
RES_FIN
24V3
5VN
D-GND
P-GND
F-GND
24V5
P-GND
CN
1 TXD_FIN
2 RXD_FIN
3 /DTR_FIN
4 /DSR_FIN
5 RES_FIN
6 24V3
7 5VN
8 D-GND
9 P-GND
10 F-GND
11 24V5
12 P-GND
FINISHER & INSERTOR (OPTION)
FINISHER

Q. Scanner section 1/2 (P17)

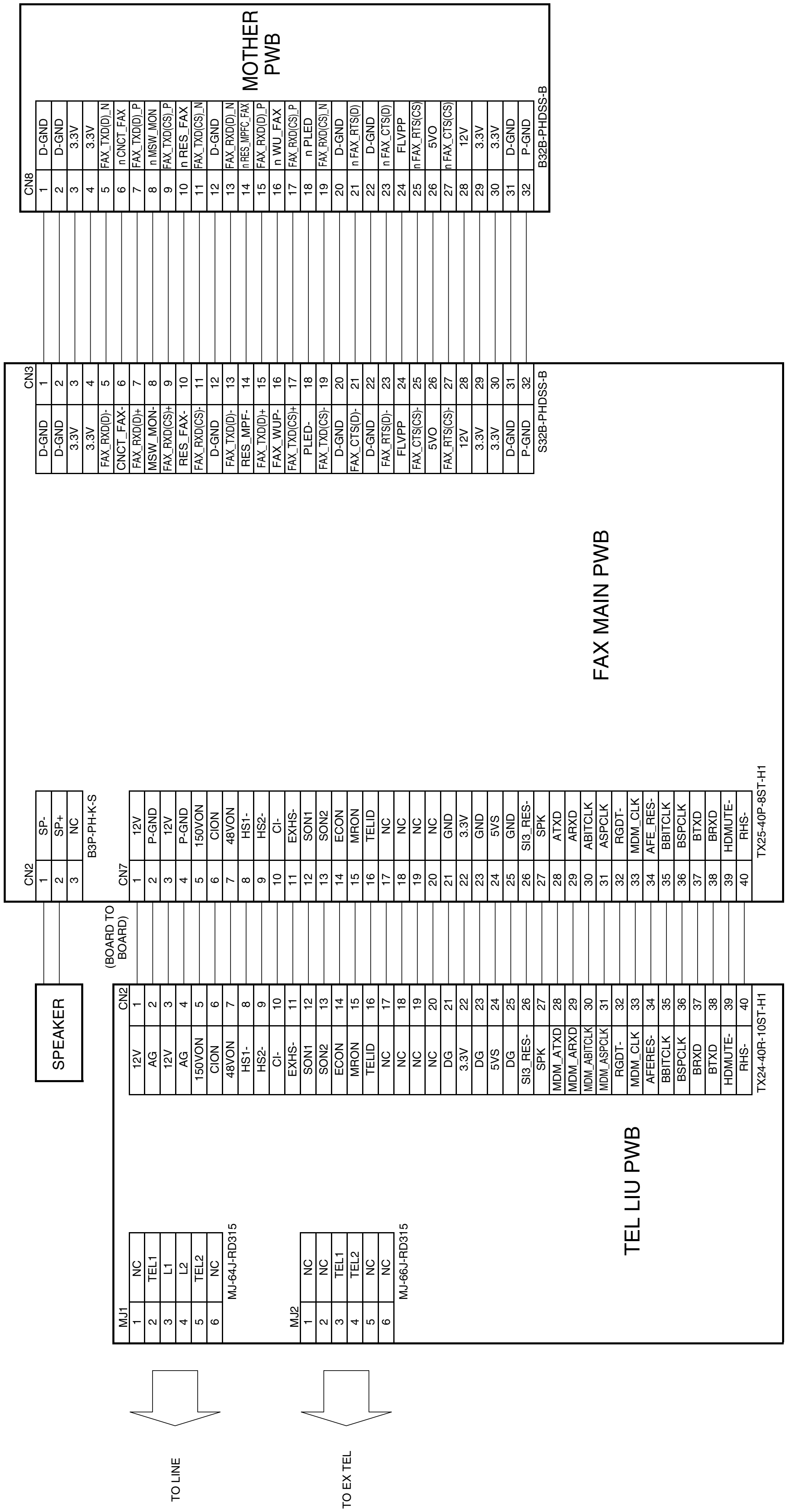


MHPS
1 5V
2 D-GND
3 MHPS
(MHPS harness)
CN134
MIRROR MOTOR
CN137
MIM_A
MIM_B
MIM_/A
MIM_/B
CL
CL INVERTOR PWB
1 P-GND
2 P-GND
3 CL
4 24VPD
5 24VPD
(SCN-LAMP FFC)
CN130
CCD PWB
CN1
501190-2017
(CCD-F harness 1)
CN147
AGND
TC+
TE+
TC-
TE-
TB+
TD+
TB-
TD-
TA+
TCLK+
TA-
TCLK-
CN3
501190-4017
CN148
A12V
CCD_CP-
CCD_CP+
A5V
CCD_RS+
A3.3V
CCD_RS-
/LVDS_STBY
/RES_CCDAD
CCD_CLK2-
AD_SCLK
CCD_CLK2+
AD_WRSO
AD_SEN
CCD_CLK1+
AD_RDSI
CCD_CLK1-
AD_CLPIN
AD_MCLK-
AD_BLKCLP
AD_MCLK+
CCD_SH
CLKP1_OUT+
SH_OUT+
CLKP1_OUT-
SH_OUT-
SCN-CNT PWB
CN136
B6P-PH-K-S
1 5VEXT
2 D-GND
3 OCSW
4 24VEXT
5 /SIZE_LED1
6 /SIZE_LED2
FG
OCSW
ORS LED PWB
F-GND
DOCC PWB
OPTION
CN3
B15P-PH-K-S
SCANDATA0-
SCANDATA0+
D-GND
SCANDATA1-
SCANDATA1+
SCANDATA2-
SCANDATA2+
SCANCLKIN-
SCANCLKIN+
SCANDATA3-
SCANDATA3+
CN4
B12B-PHDSS-B
/DETECT
/DET_ANC
TXD_SCN
RXD_SNC
NC
SCAN IN PWB
SCANCLKOUT-
SCANCLKOUT+
TXD_ANC
RXD_ANC
CN143
CN146
B10B-PHDSS-B
MOTHER PWB
CN5
CN19
CN144
CN25
B30B-PHDSS-B
n INFO_LED
5VO
CN_CHK_IN
WU_LED
POW_LED
LCD_CLK+
n WU_KEY
LCD_CLK-
n PWRSW
LCD_DAT2+
n POF_SCN
LCD_DAT2-
n RES_MPFC_SCN
RES_SCN
LCD_DAT1+
n RTS_SCN
LCD_DAT1-
TXD_SCN
n CTS_SCN
LCD_DAT0+
RXD_SCN
LCD_DAT0-
n FWP_SCN
CN_CHK_OUT
CN138
B6P-VH-R
CN18
B6P-VH
P-GND
24V3
12V
5VN
3.3V
(SCN-Mother DATA harness)

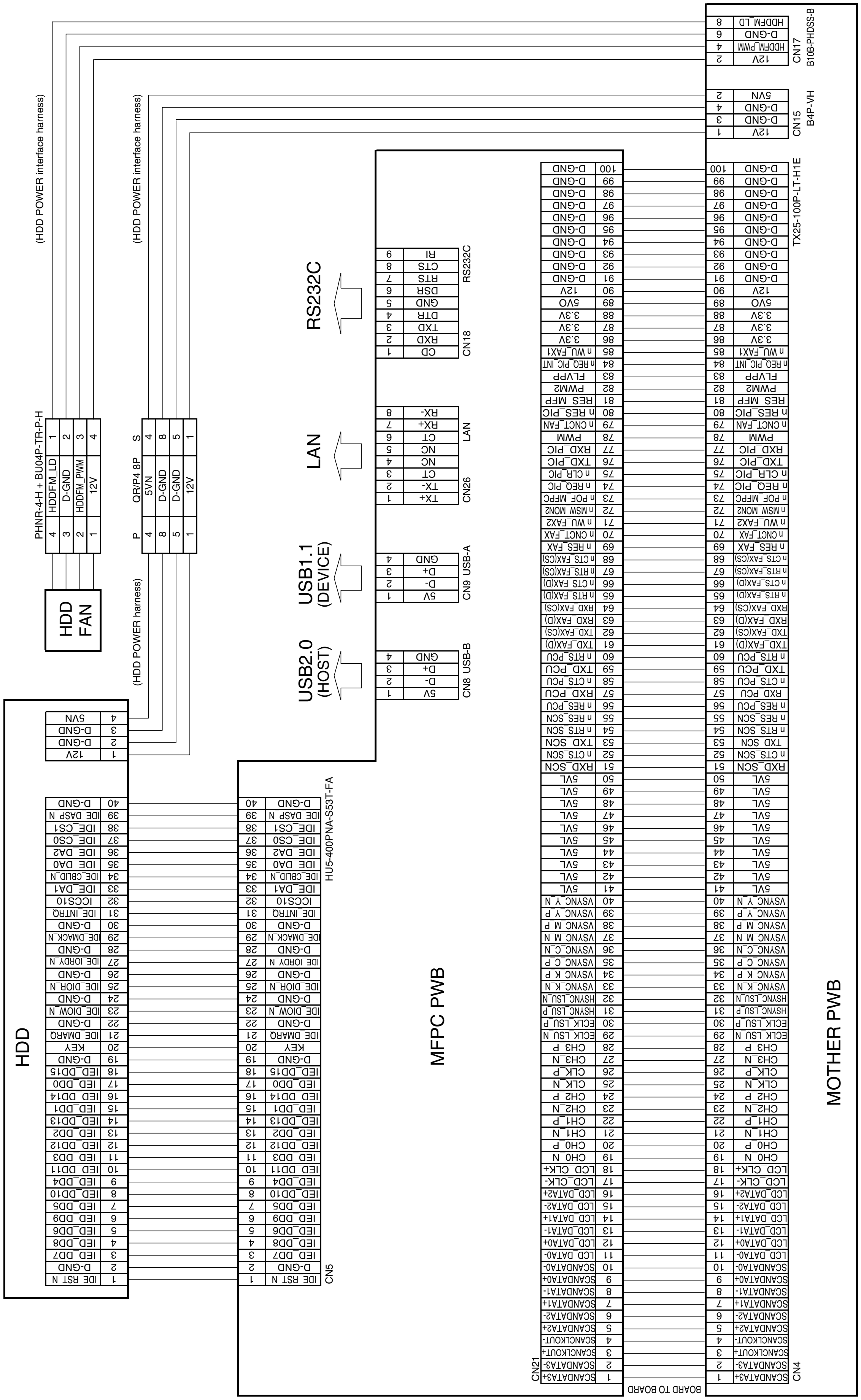
R. Scanner section 2/2 (P18)


ORS PD PWB
1 PDSEL0, 2 PDSEL1, 3 PDSEL2, 4 5VN, 5 PD, 6 D-GND
POWER SW PWB
CN1 3 n PWRSW, 2 D-GND, 1 D-GND
(PSW harness)
MFP OPE-P PWB
CN2 PDSEL0 1, PDSEL1 2, PDSEL2 3, 5VN 4, PD 5, D-GND 6
B6B-PH-SM3-TB
CN3 n PWRSW 1, D-GND 2, D-GND 3
S3B-PH-K-S
CN1 1 D-GND, 2 3.3V, 3 5VN, 4 D-GND, 5 PD, 6 PDSEL0, 7 PDSEL1, 8 PDSEL2, 9 /KEYIN, 10 SEG0, 11 SEG1, 12 SEG2, 13 /F0, 14 /F1, 15 /F2, 16 /F3, 17 /BZR, 18 D-GND, 19 n PWRSW, 20 n WU_KEY, 21 n INFO_LED, 22 POW_LED, 23 WU_LED, 24 D-GND, 25 5VO, 26 D-GND
52610-2671
(MFP OP I/F FFC)
LCD UN
15 VO, 14 LP, 13 D-GND, 12 CP, 11 D-GND, 10 M, 9 3.3V_EXT, 8 D0, 7 D1, 6 D-GND, 5 D2, 4 D3, 3 D-GND, 2 DISP, 1 VEE
(LCD FFC)
TOUCH PANEL
LCD INVERTOR PWB
CN1 3 /CCFT, 2 D-GND, 1 24V_EXT
S3B-PH-K-S
CN2 1 CCFT+, 2 /CCFT
S02(8.0)B-BHS
(LCD inverter harness)
BACK LIGHT
LVDS-P PWB
CN3 VO 1, LP 2, D-GND 3, CP 4, D-GND 5, M 6, 3.3V_EXT 7, D0 8, D1 9, D-GND 10, D2 11, D3 12, D-GND 13, DISP 14, VEE 15
52746-1570
CN4 /YL(Y1) 1, XH(X1) 2, YH(Y2) 3, /XL(X2) 4
04FM-1.0SP-1.9-GW-TF
CN2 /CCFT 1, D-GND 2, 24V_EXT 3
S3B-PH-SM4-TB
CN1 30 D-GND, 29 CN_CHK_OUT, 28 LCD_CLK+, 27 LCD_CLK-, 26 D-GND, 25 LCD_DAT2+, 24 LCD_DAT2-, 23 D-GND, 22 LCD_DAT1+, 21 LCD_DAT1-, 20 D-GND, 19 LCD_DAT0+, 18 LCD_DAT0-, 17 D-GND, 16 DISP, 15 3.3V_EXT, 14 VEEON, 13 VCONT, 12 AVCC, 11 SC_TEMP, 10 P-GND, 9 24V_EXT, 8 NC, 7 /CCFT1, 6 CN_CHK_IN(LCD), 5 X2CN, 4 Y2CN, 3 X1CN, 2 Y1CN, 1 D-GND
52271-3090
(LVDS I/F FFC)
SCN-CNT PWB
CN135 D-GND 26, 3.3V 25, 5VN 24, D-GND 23, PD 22, PDSEL0 21, PDSEL1 20, PDSEL2 19, /KEYIN 18, SEG0 17, SEG1 16, SEG2 15, /F0 14, /F1 13, /F2 12, /F3 11, /BZR 10, D-GND 9, n PWRSW 8, n WU_KEY 7, n INFO_LED 6, POW_LED 5, WU_LED 4, D-GND 3, 5VO 2, D-GND 1
52030-2629
CN125 D-GND 30, CN_CHK_OUT 29, LCD_CLK+ 28, LCD_CLK- 27, D-GND 26, LCD_DAT2+ 25, LCD_DAT2- 24, D-GND 23, LCD_DAT1+ 22, LCD_DAT1- 21, D-GND 20, LCD_DAT0+ 19, LCD_DAT0- 18, D-GND 17, DISP 16, 3.3V_EXT 15, VEEON 14, VCONT 13, AVCC 12, SC_TEMP 11, P-GND 10, 24V_EXT 9, NC 8, /CCFT1 7, CN_CHK_IN(LCD) 6, X2CN 5, Y2CN 4, X1CN 3, Y1CN 2, D-GND 1
52030-3029
CN142 1 P-GND, 2 P-GND, 3 SPPD1, 4 SPPD2, 5 24VPD, 6 24VPD, 7 5V_EXT, 8 AVCC, 9 SPFMCK, 10 SPFMM1, 11 SPFMM2, 12 SPFMO1, 13 SPFMO2, 14 SPRMA, 15 SPRMA/, 16 SPRMB, 17 SPRMB/, 18 SPRMO1, 19 SGS, 20 STMPS, 21 SRRC, 22 SPFC, 23 SPWS, 24 SELA_, 25 SELB_, 26 SELC_, 27 SSELO, 28 SPPD4, 29 SPFFAN, 30 SPPD3, 31 SPPD5, 32 5VPD, 33 D-GND, 34 D-GND
B34B-PHDSS-B
CN145 1 /C_CARD, 2 /C_SEL, 3 /C_CLOCK, 4 /C_DATA, 5 5V, 6 D-GND
B6P-PH-K-R
CN131 1 n A_PNC, 2 n A_COPY, 3 n A_CA, 4 n A_READY, 5 n A_AUD, 6 5V, 7 D-GND, 8 24V, 9 NC, 10 n A_TC, 11 24V, 12 PNC-a, 13 D-GND
B13P-PH-K-S
(SCN-MOTHER DATA harness)
PHNR-6-H + BU06P-TR-P-H
6 /C_CARD 1, 5 /C_SEL 2, 4 /C_CLOCK 3, 3 /C_DATA 4, 2 5V 5, 1 D-GND 6
(HL interface harness PA)
R SM6P P
1 /C_CARD 1, 2 /C_SEL 2, 3 /C_CLOCK 3, 4 /C_DATA 4, 5 5V 5, 6 D-GND 6
1 P-GND 1, 2 P-GND 2, 3 SPPD1 3, 4 SPPD2 4, 5 24VPD 5, 6 24VPD 6, 7 5V_EXT 7, 8 AVCC 8, 9 SPFMCK 9, 10 SPFMM1 10, 11 SPFMM2 11, 12 SPFMO1 12, 13 SPFMO2 13, 14 SPRMA 14, 15 SPRMA/ 15, 16 SPRMB 16, 17 SPRMB/ 17, 18 SPRMO1 18, 19 SGS 19, 20 STMPS 20, 21 SRRC 21, 22 SPFC 22, 23 SPWS 23, 24 SELA_ 24, 25 SELB_ 25, 26 SELC_ 26, 27 SSELO 27, 28 SPPD4 28, 29 SPFFAN 29, 30 SPPD3 30, 31 SPPD5 31, 32 5VPD 32, 33 D-GND 33, 34 D-GND 34
TO R-SPF
CARD READER (OPTION)
TO AUDITER

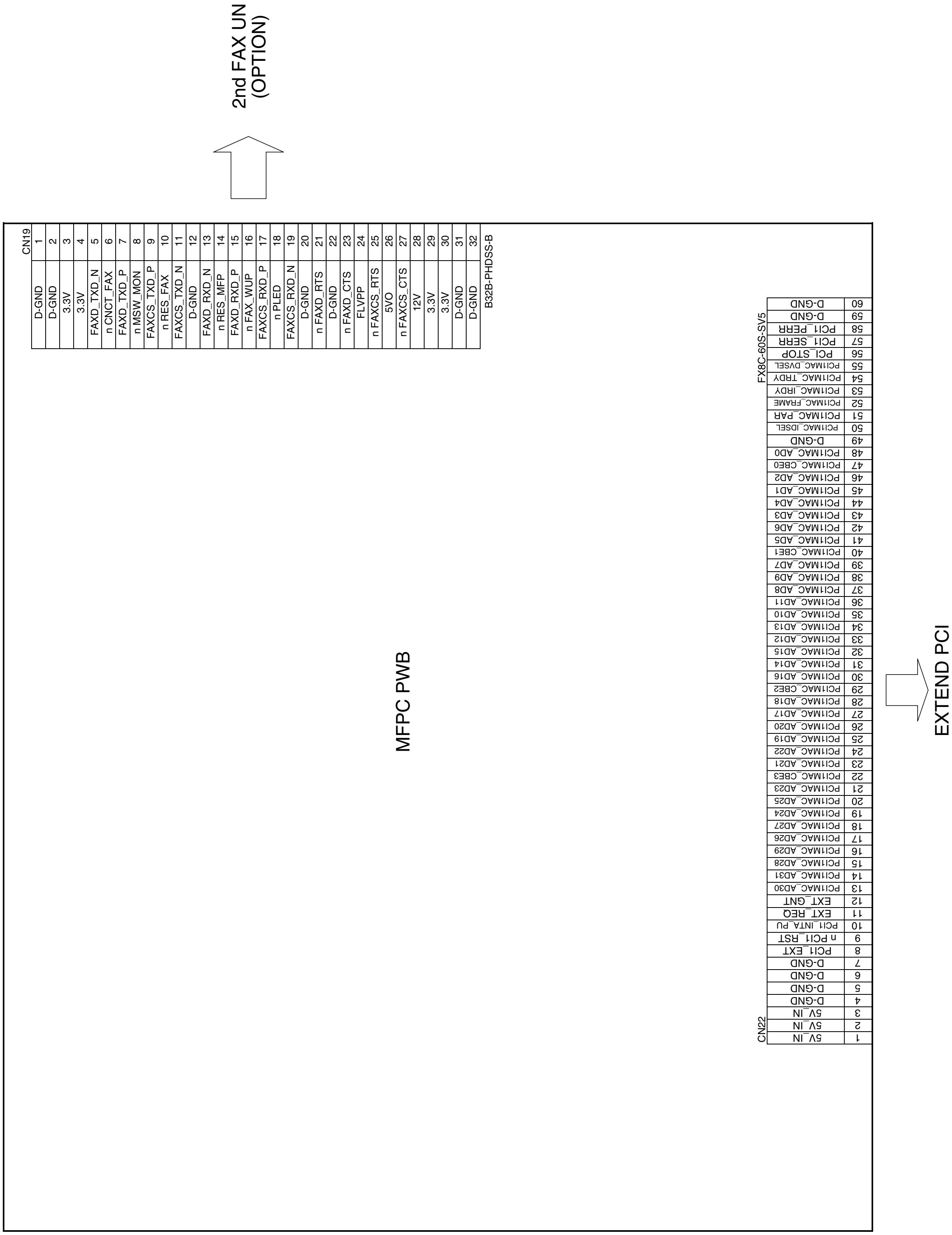
S. FAX section (P19)


MOTHER PWB
CN8
1 D-GND
2 D-GND
3 3.3V
4 3.3V
5 FAX_TXD(D)_N
6 n CNCT_FAX
7 FAX_TXD(D)_P
8 n MSW_MON
9 FAX_TXD(CS)_P
10 n RES_FAX
11 FAX_TXD(CS)_N
12 D-GND
13 FAX_RXD(D)_N
14 n RES_MPFC_FAX
15 FAX_RXD(D)_P
16 n WU_FAX
17 FAX_RXD(CS)_P
18 n PLED
19 FAX_RXD(CS)_N
20 D-GND
21 n FAX_RTS(D)
22 D-GND
23 n FAX_CTS(D)
24 FLVPP
25 n FAX_RTS(CS)
26 5VO
27 n FAX_CTS(CS)
28 12V
29 3.3V
30 3.3V
31 D-GND
32 P-GND
B32B-PHDSS-B
FAX MAIN PWB
CN3
1 D-GND
2 D-GND
3 3.3V
4 3.3V
5 FAX_RXD(D)-
6 CNCT_FAX-
7 FAX_RXD(D)+
8 MSW_MON-
9 FAX_RXD(CS)+
10 RES_FAX-
11 FAX_RXD(CS)-
12 D-GND
13 FAX_TXD(D)-
14 RES_MPF-
15 FAX_TXD(D)+
16 FAX_WUP-
17 FAX_TXD(CS)+
18 PLED-
19 FAX_TXD(CS)-
20 D-GND
21 FAX_CTS(D)-
22 D-GND
23 FAX_RTS(D)-
24 FLVPP
25 FAX_CTS(CS)-
26 5VO
27 FAX_RTS(CS)-
28 12V
29 3.3V
30 3.3V
31 D-GND
32 P-GND
S32B-PHDSS-B
CN2
1 SP-
2 SP+
3 NC
B3P-PH-K-S
CN7
1 12V
2 P-GND
3 12V
4 P-GND
5 150VON
6 CION
7 48VON
8 HS1-
9 HS2-
10 CI-
11 EXHS-
12 SON1
13 SON2
14 ECON
15 MRON
16 TELID
17 NC
18 NC
19 NC
20 NC
21 GND
22 3.3V
23 GND
24 5VS
25 GND
26 SI3_RES-
27 SPK
28 ATXD
29 ARXD
30 ABITCLK
31 ASPCLK
32 RGDT-
33 MDM_CLK
34 AFE_RES-
35 BBITCLK
36 BSPCLK
37 BTXD
38 BRXD
39 HDMUTE-
40 RHS-
TX25-40P-8ST-H1
(BOARD TO BOARD)
SPEAKER
TEL LIU PWB
CN2
1 12V
2 AG
3 12V
4 AG
5 150VON
6 CION
7 48VON
8 HS1-
9 HS2-
10 CI-
11 EXHS-
12 SON1
13 SON2
14 ECON
15 MRON
16 TELID
17 NC
18 NC
19 NC
20 NC
21 DG
22 3.3V
23 DG
24 5VS
25 DG
26 SI3_RES-
27 SPK
28 MDM_ATXD
29 MDM_ARXD
30 MDM_ABITCLK
31 MDM_ASPCLK
32 RGDT-
33 MDM_CLK
34 AFERES-
35 BBITCLK
36 BSPCLK
37 BRXD
38 BTXD
39 HDMUTE-
40 RHS-
TX24-40R-10ST-H1
MJ1
1 NC
2 TEL1
3 L1
4 L2
5 TEL2
6 NC
MJ-64J-RD315
MJ2
1 NC
2 NC
3 TEL1
4 TEL2
5 NC
6 NC
MJ-66J-RD315
TO LINE
TO EX TEL

T. MFP board section 1/2 (P20)


MOTHER PWB
MFPC PWB
HDD
HDD FAN
CN17 B10B-PHDSS-B
CN15 B4P-VH
TX25-100P-LT-H1E
CN4
CN21
BOARD TO BOARD
CN18 RS232C
CN26 LAN
CN9 USB-A
CN8 USB-B
CN5
HU5-400PNA-S53T-FA
RS232C
LAN
USB1.1 (DEVICE)
USB2.0 (HOST)
PHNR-4-H + BU04P-TR-P-H
QR/P4 8P
(HDD POWER interface harness)
(HDD POWER harness)

U. MFP board section 2/2 (P21)


2nd FAX UN
(OPTION)
CN19
1 D-GND
2 D-GND
3 3.3V
4 3.3V
5 FAXD_TXD_N
6 n CNCT_FAX
7 FAXD_TXD_P
8 n MSW_MON
9 FAXCS_TXD_P
10 n RES_FAX
11 FAXCS_TXD_N
12 D-GND
13 FAXD_RXD_N
14 n RES_MFP
15 FAXD_RXD_P
16 n FAX_WUP
17 FAXCS_RXD_P
18 n PLED
19 FAXCS_RXD_N
20 D-GND
21 n FAXD_RTS
22 D-GND
23 n FAXD_CTS
24 FLVPP
25 n FAXCS_RTS
26 5VO
27 n FAXCS_CTS
28 12V
29 3.3V
30 3.3V
31 D-GND
32 D-GND
B32B-PHDSS-B
MFPC PWB
FX8C-60S-SV5
CN22
60 D-GND
59 D-GND
58 PCI1_PERR
57 PCI1_SERR
56 PCI_STOP
55 PCI1MAC_DVSEL
54 PCI1MAC_TRDY
53 PCI1MAC_IRDY
52 PCI1MAC_FRAME
51 PCI1MAC_PAR
50 PCI1MAC_IDSEL
49 D-GND
48 PCI1MAC_AD0
47 PCI1MAC_CBE0
46 PCI1MAC_AD2
45 PCI1MAC_AD1
44 PCI1MAC_AD4
43 PCI1MAC_AD3
42 PCI1MAC_AD6
41 PCI1MAC_AD5
40 PCI1MAC_CBE1
39 PCI1MAC_AD7
38 PCI1MAC_AD9
37 PCI1MAC_AD8
36 PCI1MAC_AD11
35 PCI1MAC_AD10
34 PCI1MAC_AD13
33 PCI1MAC_AD12
32 PCI1MAC_AD15
31 PCI1MAC_AD14
30 PCI1MAC_AD16
29 PCI1MAC_CBE2
28 PCI1MAC_AD18
27 PCI1MAC_AD17
26 PCI1MAC_AD20
25 PCI1MAC_AD19
24 PCI1MAC_AD22
23 PCI1MAC_AD21
22 PCI1MAC_CBE3
21 PCI1MAC_AD23
20 PCI1MAC_AD25
19 PCI1MAC_AD24
18 PCI1MAC_AD27
17 PCI1MAC_AD26
16 PCI1MAC_AD29
15 PCI1MAC_AD28
14 PCI1MAC_AD31
13 PCI1MAC_AD30
12 EXT_GNT
11 EXT_REQ
10 PCI1_INTA_PU
9 n PCI1_RST
8 PCI1_EXT
7 D-GND
6 D-GND
5 D-GND
4 D-GND
3 5V_IN
2 5V_IN
1 5V_IN
EXTEND PCI

3. Signal list

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Note
			"L"	"H"				
1TNFD	Waste toner full detection switch [Mechanical switch]	Detects the waste toner full.						
1TUD_CL	Transfer belt separation CL detection	Detects the transfer belt separation CL.						
1TUD_K	Transfer belt separation BK detection	Detects the transfer belt separation BK.						
1TURC	Primary transfer separation clutch [Electromagnetic clutch]	Controls the primary transfer separation mode.						
ADUM_L	ADU motor lower [Stepping motor]	Drives the right door section.						
APPD1	ADU transport path detection 1 [Transmission type]	Detects the duplex (ADU) upstream paper pass.						
APPD2	ADU transport path detection 2 [Transmission type]	Detects the duplex (ADU) midstream paper pass.						
CCFT	LCD backlight [CCFT cool cathode ray tube]	Backlight for the CCD						
CLI	Scanner lamp [Xenon lamp]	Radiates lights onto a document for the CCD to scan document images.						
CLUD1	Tray 1 upper limit detection (Lift HP detection) [Transmission type]	Detects tray 1 upper limit .						
CLUD2	Tray 2 upper limit detection (Lift HP detection) [Transmission type]	Detects tray 2 upper limit.						
CLUM1	Paper tray lift-up motor (Paper feed tray 1) [DC brush-less motor]	Drives the lift plate of the paper feed tray.						
CLUM2	Paper tray lift-up motor (Paper feed tray 2) [DC brush-less motor]	Drives the lift plate of the paper feed tray.						
CPED1	Tray 1 paper empty detection [Transmission type]	Detects tray 1 paper empty.						
CPED2	Tray 2 paper empty detection [Transmission type]	Detects tray 2 paper empty.						
CPFC	Tray vertical transport clutch [Electromagnetic clutch]	Controls ON/OFF of the paper transport roller in the paper feed tray section.						
CPFD1	Tray 1 transport detection (Paper entry detection) [Transmission type]	Detects tray 1 paper pass.						
CPFD2	Tray 2 transport detection (Paper entry detection) [Transmission type]	Detects tray 2 paper pass.						
CPFM	Paper feed motor [Brush-less motor]	Drives the paper feed section.						
CPUC1	Paper feed clutch (Paper feed tray 1) [Electromagnetic clutch]	Controls ON/OFF of the roller in the paper feed tray 1 section.						
CPUC2	Paper feed clutch (Paper feed tray 2) [Electromagnetic clutch]	Controls ON/OFF of the roller in the paper feed tray 2 section.						
CPUFM	Controller cooling fan motor	Cools the controller PWB.						
CSPD1	Tray 1 paper remaining quantity detection	Detects tray 1 paper remaining quantity.						
CSPD2	Tray 2 paper remaining quantity detection	Detects tray 2 paper remaining quantity.						
CSS1	Tray 1 installation detection	Detects the tray 1.						
CSS2	Tray 2 installation detection	Detects the tray 2.						
DHPD_CL	CL phase detection	Detects the CL phase.						
DHPD_K	BK phase detection	Detects the BK phase.						
DHSW (Japan only)	Dehumidifier heater switch [Seesaw switch]	Turns ON/OFF the power lone of the dehumidifier heaters provided in the scanner (reading) section and the paper feed section.						
DL_C	Discharge lamp C [LED]	Discharges electric charges on the OPC drum.						
DL_K	Discharge lamp K [LED]	Discharges electric charges on the OPC drum.						
DL_M	Discharge lamp M [LED]	Discharges electric charges on the OPC drum.						
DL_Y	Discharge lamp Y [LED]	Discharges electric charges on the OPC drum.						
DL_K	Discharge lamp K [LED]	Discharges electric charges on the OPC drum.						
DM_CL	Drum motor (CL) [Stepping motor]	Drives the color OPC drum unit.						
DM_K	Drum motor (K) [Stepping motor]	Drives the black OPC drum unit.						
DSW_ADU	ADU transport open/close detection [Transmission type]	Detects the duplex (ADU) cover open/ close.						

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Note
			"L"	"H"				
DSW_C	Tray 1 and 2 transport cover open/close detection	Detects the tray 1 and 2 transport cover open/close.						
DSW-F	Front door open/close switch [Micro switch]	Detects open/close of the front door, and turns ON/OFF the power line of the fusing motor and the LSU laser.						
DSW-R	Right door open/close switch [Micro switch]	Detects open/close of the right door, and turns ON/OFF the power line of the fusing motor and the LSU laser.						
DVM_CL	Developing drive motor (CL) [Brush-less motor]	Drives the developing section (CL).						
DVM_K	Developing drive motor (K) [Brush-less motor]	Drives the developing section/transfer section (K).						
F1	Fuse (20A 125V)						AC power PWB	
F1	Fuse (200mA 250V)						LCD INV PWB	
F1	Fuse (1.25A250V)						CL invertor PWB	
F2	Fuse (20A 125V)						AC power PWB	
F3	Fuse (T2AH250V)						AC power PWB	
F4	Fuse (T2AH250V)						AC power PWB	
F101	Fuse (125V 12A)						DC power PWB	
F102	Fuse (T1AH250V)						DC power PWB	
F103	Fuse (T8AH250V)						DC power PWB	
F201	Fuse (T6.3AH250V)						DC power PWB	
F202	Fuse (T6.3AH250V)						DC power PWB	
F203	Fuse (T6.3AH250V)						DC power PWB	
F204	Fuse (T6.3AH250V)						DC power PWB	
F205	Fuse (T6.3AH250V)						DC power PWB	
F301	Fuse (T5AH250V)						DC power PWB	
FUM	Fusing drive motor [Stepping motor]	Drives the fusing unit.						
HDDFM	HDD cooling fan motor	Cools the HDD.						
HL_LM	Heater lamp lower main	Heats the lower heat roller. (Main)						
HL_UM	Heater lamp upper main	Heats the upper heat roller. (Main)						
HL_US	Heater lamp upper sub	Heats the upper heat roller. (Sub)						
HLTS1	Thermostat (Fusing unit)	Prevents against overheating of the fusing roller.						
HLTS2	Thermostat (Fusing unit)	Prevents against overheating of the fusing roller.						
HLTS3	Thermostat (Fusing unit)	Prevents against overheating of the fusing roller.						
HOPS	Shifter home position detection	Detects the shifter home position.						
LSUSS1	LSU shutter solenoid [Electromagnetic solenoid]	Opens/closes the LSU shutter.						
MHPS	Scanner home position sensor [Transmission type]	Detects the scanner home position.		Home position				
MIM	Scanner motor [Stepping motor]	Drives the scanner (reading) section.						
MPED	Manual feed paper empty detection [Transmission type]	Detects the manual feed paper empty.						
MPFD	Manual feed paper entry detection [Transmission type]	Detects the manual feed paper entry.						
MPFS	Paper pickup solenoid (Manual paper feed) [Electromagnetic solenoid]	Paper pickup solenoid (Manual paper feed)						
MPGS	Manual paper feed gate solenoid [Electromagnetic solenoid]	Controls open/close of the manual paper feed gate solenoid.						
MPLD	Manual feed paper length detector	Detects the manual paper feed tray paper length.						Manual paper feed unit

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Note
			"L"	"H"				
MPUC	Manual paper feed clutch [Electromagnetic clutch]	Controls ON/OFF of the manual paper feed roller in the manual paper feed section.						
MPWD	Manual paper feed tray paper width detector [Volume resistor]	Detects the manual paper feed tray paper width.						
MSW	Main SW [Seesaw switch]	Turns ON/OFF the main DC power source.						
MTOP1	Manual paper feed tray pull-out position detector 1 [Transmission type]	Detects the manual paper feed tray paper pull-out position (storing position).						Manual paper feed unit
MTOP2	Manual paper feed tray pull-out position detector 1 [Transmission type]	Detects the manual paper feed tray paper pull-out position (pull-out position).						Manual paper feed unit
OCSW	Original cover SW [Transmission type]	Document size detection trigger.	Close	Open				
OSM	Shifter motor [Stepping motor]	Performs offset of paper.						
OZFM	Ozone fan motor	Exhausts ozone.						
PCS_CL/K	Process control sensor [Reflection type]	Detects the toner patch density.						
PCSS	Process control shutter solenoid [Electromagnetic solenoid]	Opens/closes the shutter of the process control and the registration sensor.						
PFM	PS front motor [Stepping motor]	Drives transport between the resist roller and the paper feed section, transport between the resist roller and the right door section.						
PGM	Polygon motor [DC brushless motor]	Scans the laser beam.						
POD1	Fusing after-detection [Transmission type]	Detects the paper exit from fusing.						
POD2	Paper exit detection [Transmission type]	Detects the paper from paper exit.						
POD3	Right tray paper exit detection	Detects the paper exit to right tray.						
POFM_F	Paper exit cooling fan motor (F side)	Cools the fusing unit.						
POFM_R	Paper exit cooling fan motor (R side)	Cools the fusing unit.						
POM	Paper exit drive motor [Stepping motor]	Drives the paper exit roller.						
PPD1	Registration pre-detection [Transmission type]	Detects the paper in front of resist roller.						
PPD2	Registration detection	Detects the paper in rear of resist roller.						
PSFM	Power cooling fan motor	Cools the power unit.						
PWRSW	Operation panel power switch [Push switch]	Outputs the ON/OF control signal of the DC power source.						
REGS_F/R	Resist sensor [Reflection type]	Detects the resist shift.						
RRM	Registration motor [Stepping motor]	Drives the resist roller and controls ON/OFF.						
TCS_C	Toner density sensor [Magnetic sensor]	Detects the toner density (C).						
TCS_K	Toner density sensor [Magnetic sensor]	Detects the toner density (K).						
TCS_M	Toner density sensor [Magnetic sensor]	Detects the toner density (M).						
TCS_Y	Toner density sensor [Magnetic sensor]	Detects the toner density (Y).						
TFD2	Paper exit full detection [Transmission type]	Detects the face down paper exit tray full						
TFD3	Right tray paper exit full detection	Detects the right tray paper exit full.						
TH_M/ HUD_M	Temperature/humidity detection	Detects the temperature/humidity.						
TNM_C	Toner motor C [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.						
TNM_K	Toner motor K [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.						
TNM_M	Toner motor M [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.						
TNM_Y	Toner motor Y [Synchronous motor]	Transports toner from the toner cartridge to the developing unit.						
VR201	Volume	+12V output adjustment					DC power PWB	
VR203	Volume	+24V output adjustment					DC power PWB	

Signal name	Name	Function/Operation	Connector level		Connector No.	Pin No.	PWB name	Note
			"L"	"H"				
VR204	Volume	+5VN output adjustment					DC power PWB	
VR205	Volume	+3.3V output adjustment					DC power PWB	
VR402	Volume	+5VO, +5VL output adjustment					DC power PWB	
WTNM	Waste toner drive motor [Synchronous motor]	Stirs waste toner.						

[12] OTHERS

1. System settings

A. System settings (General)

(1) When User Authentication is not Enabled

1) Press the [SYSTEM SETTINGS] key.
2) Configure the desired system settings.
   - User authentication is initially disabled (factory default setting).

(2) When User Authentication is Enabled

a. Login by login name and password

1) Touch the [Login Name] key.
2) Select the user.
3) Enter a password.
   (1) Touch the [Password] key.
   (2) Enter a password on the text entry screen that will appear.
4) Touch the [OK] key.

b. Login by user number

1) Enter your user number with the numeric keys.
2) Touch the [OK] key.

(3) System Settings (General) List

Item	Factory default setting Page
■ Total Count	
● Job Count	-
● Device Count	-
■ Default Settings	
● Display Contrast	(Set to the centre value)
● Clock	
▶ Date Format	Varies depending on country and region
▶ Daylight Saving Time Setting	
● Keyboard Select	Varies depending on country and region
■ List Print (User)	
● All Custom Setting List	-
● Printer Test Page	
▶ PCL Symbol Set List*1	-
▶ PCL Internal Font List*1	-
▶ PCL Extended Font List*1	-
▶ PS Font List*2	-
▶ PS Extended Font List*2	-
▶ NIC Page	-
● Sending Address List*3	
▶ Individual List	-
▶ Group List	-
▶ Program List	-
▶ Memory Box List	-
▶ All Sending Address List	-
● Document Filing Folder List	-
■ Paper Tray Settings	
● Tray Settings	
▶ Tray 1	Plain, A4 (8-1/2" x 11")
▶ Tray 2	Plain, A3 (11" x 17")
▶ Tray 3	Varies depending on the machine configuration
▶ Tray 4	
▶ Tray 5	
▶ Bypass Tray	Plain, Auto-AB (Auto-Inch)
● Paper Type Registration	
▶ User Type 1	-
▶ User Type 2	-
▶ User Type 3	-
▶ User Type 4	-
▶ User Type 5	-
▶ User Type 6	-
▶ User Type 7	-
● Auto Tray Switching	Enable
■ Address Control	
● Direct Address / Program	
▶ Individual	
◆ E-mail*4	
• Search Number	-
• Name	-
• Initial	-
• Index	-
• Address	-
• Key Name	-
• File Format	-
◆ Internet Fax*5	
• Search Number	-
• Name	-
• Initial	-
• Index	-
• Address	-
• Key Name	-
• Compression	-
• Internet Fax Report	-
▶ Group	
◆ Search Number	-
◆ Group Name	-
◆ Initial	-
◆ Index	-
◆ Address	-
◆ Key Name	-
▶ Program	
◆ Program Name	-
◆ Settings	
• Address	-
• Resolution	-
• Exposure	-
• Special Modes	-
▶ Amend/Delete	-
● Custom Index	
▶ User 1	-
▶ User 2	-
▶ User 3	-
▶ User 4	-
▶ User 5	-
▶ User 6	-
■ Fax Data Receive/Forward	
● Internet Fax Manual Reception*5	-
▶ Reception Start	-
▶ Manual Reception Key in Initial Screen	Enable
● Internet Fax Data Forward*5	-
■ Printer Condition Settings*1	
● Printer Default Settings	
▶ Copies	1
▶ Orientation	Portrait
▶ Default Paper Size	A4 (8-1/2" x 11")
▶ Default Output Tray*6	Varies depending on the machine configuration
▶ Default Paper Type	Plain Paper
▶ Line Thickness	5
▶ 2-Sided Print	1-Sided
▶ Colour Mode	B/W
▶ N-Up Print	1-Up
● PCL Settings*1	
▶ PCL Symbol Set Setting	3. PC-8
▶ PCL Font Setting	Internal Font, 0. Courier
▶ PCL Line Feed Code	0. CR=CR:LF=LF:FF=FF
▶ Wide A4	Disable
● Postscript Settings*2	
▶ Print PS Errors	Disable

Item	Factory default setting Page
■ Document Filing Control	
● Custom Folder Registration	
▶ Folder Name	-
▶ Initial	-
▶ Password	-
▶ User Name	-
● Amend/Delete Custom Folder	-
■ USB-Device Check	-
■ User Control*7	
● Amend User Information	-

*1: In some countries and regions, the printer expansion kit must be installed.

*2: When the PS3 expansion kit is installed.

*3: In some countries and regions, the facsimile expansion kit or the Internet fax expansion kit or the network scanner expansion kit must be installed.

*4: In some countries and regions, the network scanner expansion kit must be installed.

*5: When the Internet fax expansion kit is installed.

*6: When a right tray is installed.

*7: When user authentication is enabled and a user without the authority to configure the system settings (administrator) has logged in. (Excluding factory stored users.)

*8: When the facsimile expansion kit is installed.

*9: When a saddle stitch finisher or finisher is installed.

B. System settings (Administrator)

(1) When User Authentication is not Enabled

1) Press the [SYSTEM SETTINGS] key.
2) Touch the [Admin Password] key.
3) Log in.
   (1) Touch the [Password] key and enter the administrator password.
   (2) Touch the[OK] key.
4) Configure the desired system settings.

(2) Login by login name and password (and e-mail address*)

1) Touch the [Login Name] key.
   * If login name / password / e-mail address is selected for the login method, [E-mail Address] will appear under the [Login Name] key.
2) Touch the [Admin Login] key.
3) Touch the [Password] key and enter the administrator password.
4) Touch the [OK] key.
5) Press the [SYSTEM SETTINGS] key.
   * This step is not necessary if you are logging in after you pressed the [SYSTEM SETTINGS] key.
6) Configure the desired system settings.

(3) Login by user number

1) Touch the [Admin Login] key.
2) Touch the [Password] key and enter the administrator password.
3) Touch the [OK] key.
4) Press the [SYSTEM SETTINGS] key.
   * This step is not necessary if you are logging in after you pressed the [SYSTEM SETTINGS] key.
5) Configure the desired system settings.
   Touch the items that you wish to configure and select the desired settings.

(4) System Settings (Administrator) List

Item	Factory default setting
■ User Control	
● User Authentication Setting	
▶ User Authentication	Disable
▶ Authentication Method Setting	Authenticate a User by Login Name and Password
▶ Device Account Mode Setting	
◆ Device Account Mode	Disable
◆ User Selection	-
● User Registration	
▶ Store	-
▶ Amend/Delete	-
▶ Delete All Users	-
● Pages Limit Group Registration	-
● Actions when the Limit of Pages for Output Jobs	Job is Stopped when the Limit of Pages is Reached
● Authority Group Registration	-
● Favourite Operation Group Registration	-
● User Count Display	-
● User Count Reset	-
● User Information Print	
▶ All User Information Print	-
▶ User List	-
▶ List of Number of Pages Used	-
▶ Page Limit Group List	-
▶ Authority Group List	-
▶ Favourite Operation Group List	-
● The Number of User Name Displayed Setting	8
● A Warning when Login Fails	Disable
● Disable Printing by Invalid User	Disable
● Default Network Authentication Server Setting	-
■ Energy Save	
● Toner Save in Printer Mode*1	Disable
● Toner Save in Copy Mode*2	Disable
● Auto Power Shut-Off	Enable
● Auto Power Shut-Off	Timer 60 min.
● Preheat Mode Setting	15 min.
■ Operation Settings	
● Keys Touch Sound	
▶ Keys Touch Sound	Middle
▶ Keys Touch Sound at Initial Point	Disable
● Auto Clear Setting	60 sec.
▶ Cancel Timer	Disable
● Message Time Setting	6 sec.
● Display Language Setting	English
● Disabling of Job Priority Operation	Disable
● Disabling of Bypass Printing	Disable
● Key Operation Setting	0.0 sec.
▶ Disable Auto Key Repeat	Disable
● Disabling of Clock Adjustment	Disable
● Disabling of Covers/Inserts Mode*3	Disable
Customize Key Setting	
▶ Copy	
◆ Customize 1	Special Modes
◆ Customize 2	File
◆ Customize 3	Quick File
▶ Scanner*4	
◆ Customize 1	Special Modes
◆ Customize 2	File
◆ Customize 3	Quick File
▶ Internet Fax*5	
◆ Customize 1	Special Modes
◆ Customize 2	File
◆ Customize 3	Quick File
▶ Fax*6	
◆ Customize 1	Special Modes
◆ Customize 2	File

Item	Factory default setting
◆ Customize 3	Quick File
▶ USB Memory Scan	
◆ Customize 1	Special Modes
◆ Customize 2	Erase
◆ Customize 3	Suppress BG
▶ Data Entry	
◆ Customize 1	Special Modes
◆ Customize 2	File
◆ Customize 3	Quick File
■ Device Control	
● Original Size Detector Setting	
▶ Original Detection Size Combination	Varies depending on country and region
▶ Cancel Detection at Document Glass	Disable
● Disabling of Document Feeder*3	Disable
● Original Feeding Mode*3	All Disabled
● Disabling of Duplex	Disable
● Disabling of Large Capacity Cassette*7	Disable
● Disabling of Optional Paper Drawer*8	Disable
● Disabling of Tray Setting	Disable
● Disabling of Finisher*9	Disable
● Disabling of Offset	Disable
● Disabling of Stapler*9	Disable
● Saddle Stitch Position Adjust*10	0.0 mm
● Disabling of Punch*11	Disable
● Disabling of Colour Mode*12	Disable
● Auto Paper Selection Setting	Plain Paper
● Registration Adjustment	
▶ Auto Adjustment	-
● Optimization of the Hard Disk	-
● Tandem Connection Setting	
▶ IP Address of Slave Machine	0.0.0.0
▶ Port Number	50001
▶ Disabling of Master Machine Mode	Disable
▶ Disabling of Slave Machine Mode	Disable
● Clear All Job Log Data	-
● Detect Standard in Auto Colour Mode	3
■ Copy Settings	
● Initial Status Settings	
▶ Colour Mode	Full Colour
▶ Paper Tray	Varies depending on the machine configuration
▶ Exposure Type	Auto
▶ Copy Ratio	1
▶ 2-Sided Copy	1-Side to 1-Side
▶ Output	-
● Exposure Adjustment	
▶ Colour	
◆ Document Glass	5
◆ Document Feeder	5
▶ B/W	
◆ Document Glass	5
◆ Document Feeder	5
● Rotation Copy Setting	Enable
● Add or Change Extra Preset Ratios	
▶ Reduction	-
▶ Enlargement	-
● Setting a Maximum Number of Copies	999
● Initial Margin Shift Setting	
▶ Side-1	10 mm (1/2")
▶ Side-2	
● Erase Width Adjustment	
▶ Edge	10 mm (1/2")
▶ Centre	
● Card Shot Settings	
▶ Original Size	X: 86 mm (3-3/8") Y: 54 mm (2-1/8")
▶ Fit to Page	Disable
● Automatic Saddle Stitch*10	Enable
● Initial Tab Copy Setting	10 mm (1/2")

Item	Factory default setting
● Disabling Deletion of Job Programs	Disable
● Disabling of Bypass-Tray in Duplex Copy	Disable
● Disabling of Auto Paper Selection	Disable
● Auto Selection Setting of Tray that is Supplied the Paper	Disable
● Initial Colour Balance Setting	Factory Default State
● Auto Colour Calibration	-
● B/W 600dpi x 600dpi Scanning Mode for Document Feeder*3	Disable
● B/W Quick Scan from Document Glass	Enable
■ Network Settings	
● IP Address Setting	DHCP
● Enable TCP/IP	Enable
● Enable NetWare	Enable
● Enable EtherTalk	Enable
● Enable NetBEUI	Enable
● Reset the NIC	-
● Ping Command	-
■ Printer Settings	
● Default Settings	
▶ Prohibit Notice Page Printing	Enable
▶ Prohibit Test Page Printing	Disable
▶ A4/Letter Size Auto Change	Varies depending on country and region.
▶ Print Density Level	
◆ Colour	3
◆ B/W	3
▶ Bypass Tray Settings	
◆ Enable Detected Paper Size in Bypass Tray	Disable
◆ Enable Selected Paper Type in Bypass Tray	Enable
◆ Exclude Bypass-Tray from Auto Paper Select	Disable
▶ Job Spool Queuing	Enable
● Interface Settings	
▶ Hexadecimal Dump Mode*1	Disable
▶ I/O Timeout	20 sec.
▶ Enable USB Port	Enable
▶ USB Port Emulation Switching*1	PCL (Auto*13)
▶ Enable Network Port	Enable
▶ Network Port Emulation Switching*1	PCL (Auto*13)
▶ Port Switching Method	Switch at End of Job
● Colour Adjustments	
▶ Auto Colour Calibration	-
■ Image Send Settings*14	
● Operation Settings	
▶ Default Display Setting	
◆ Mode	Scanner*4 (Fax*6)
◆ Hold settings for a while after scanning has been completed	Disable
◆ Switch Automatically to Copy Mode Screen	Disable
▶ Initial Resolution Setting	
◆ Apply the Resolution Set when Stored	Disable
◆ Scanner*4	200x200dpi
◆ Internet Fax*5	200x100dpi
◆ Fax*6	Standard
▶ Default Exposure	Settings
◆ Exposure	Auto
◆ Original Image Type	Text
◆ Moiré Reduction	Disable
▶ Must Input Next Address Key at Broadcast Setting	Disable
▶ Scan Complete Sound Setting	Middle
▶ The Number of File Name/Subject/Body Keys Displayed Setting	6
▶ The Number of Direct Address Keys Displayed Setting	6

Item	Factory default setting
▶ Disable Switching of Display Order	Disable
▶ Hold Setting for Received Data Print	
◆ Received Data Hold	Disable
◆ Password Setting	-
▶ Settings to Disable the Registration of Destination	
◆ Disable Registering Destination from Operation Panel	
• Group	Disable
• E-mail	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable Registering Destination on Web Page*15	
• Group	Disable
• E-mail	Disable
• FTP	Disable
• Desktop	Disable
• Network Folder	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable Registration Using Network Scan Tools*15	Disable
▶ Settings to Disable Transmission	
◆ Disable [Resend] on Fax/Image Send Mode	Disable
◆ Disable Selection from the Address Book	
• E-mail	Disable
• FTP	Disable
• Desktop	Disable
• Network Folder	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable Direct Entry	
• E-mail	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable PC-Internet Fax Transmission*5	Disable
◆ Disable PC-Fax Transmission*6	Disable
● Scan Settings*4	
▶ Default Sender Set	-
▶ Default Colour Mode Settings	
◆ Colour Mode	Auto, Greyscale
◆ B/W Mode	Mono 2
◆ Disable Change of B/W Setting in Auto Mode	Disable
▶ Initial File Format Setting	
◆ B/W	
• File Type	PDF
• Compression Mode	MMR (G4)
• Specified Pages per File	Disable
◆ Colour/Grey	
• File Type	PDF
• Compression Ratio	Medium
• Specified Pages per File	Disable
▶ Compression Mode at Broadcasting	
◆ Black & White	MMR (G4)
◆ Colour/Greyscale	Medium
▶ Maximum Size of E-mail Attachments	Unlimited
▶ Maximum Size of E-mail Attachments (FTP/Desktop/Network Folder)	Disable
▶ Default Address Setting	Disable
▶ Bcc Setting	
◆ Enable Bcc	Disable
◆ Display Bcc Address on the Job Status Screen	Disable
▶ Disable Scan Function	
PC Scan	Disable
USB Memory Scan	Disable
▶ Pre-Setting Mail Signature	Disable
● Internet Fax Settings*5	
▶ Internet Fax Default Settings	

Item	Factory default setting
◆ Internet Fax Own Name and Address Set	-
◆ Auto Wake Up Print	Enable
◆ Internet Fax Speaker Volume Settings	-
• Receive Signal	Middle
• Communication Error Signal	Middle
◆ Original Print on Transaction Report	Print Out Error Report Only
◆ Transaction Report Print Select Setting	
• Single Sending	Print Out Error Report Only
• Broadcasting	Print Out All Report
• Receiving	No Printed Report
◆ Pre-Setting Mail Signature	Disable
▶ Internet Fax Send Settings	
◆ Internet Fax Reception Report On/Off Setting	Disable
◆ Internet Fax Reception Report Request Timeout Setting	1 Hour
◆ Number of Resend Times at Reception Error	2
◆ Maximum Size of E-mail Attachments	Unlimited
◆ Rotation Sending Setting	All Enable
◆ Printing Page Number at Receiver	Enable
▶ Internet Fax Receive Settings	
◆ Auto Receive Reduce Setting	Enable
◆ Duplex Reception Setting	Disable
◆ Set Address for Data Forwarding	-
◆ Letter Size RX Reduce Print	Disable
◆ POP3 Communication Timeout Setting	60 sec.
◆ Reception Check Interval Setting	5 min.
◆ Anti Junk Mail/Domain Name Setting	All Invalid
◆ Internet Fax Output Setting*16	Varies depending on the machine configuration
■ Document Filing Settings	
● Default Mode Settings	Sharing Mode
● Sort Method Setting	Date
● Document Output Options	
▶ Print	
◆ Copy	Enable
◆ Printer	Enable
◆ Scan Send	Disable
◆ Internet Fax Send (Incl. PC-Internet Fax)	Disable
◆ Fax Send (Incl. PC-Fax)	Disable
◆ Scan to HDD	Enable
▶ Scan Send*4	
◆ Copy	Disable
◆ Scan Send	Enable
◆ Internet Fax Send (Incl. PC-Internet Fax)	Disable
◆ Fax Send (Incl. PC-Fax)	Disable
◆ Scan to HDD	Enable
▶ Internet Fax Send*5	
◆ Copy	Disable
◆ Scan Send	Disable
◆ Internet Fax Send (Incl. PC-Internet Fax)	Enable
◆ Fax Send (Incl. PC-Fax)	Disable
◆ Scan to HDD	Disable
▶ Fax Send*6	
◆ Copy	Disable
◆ Scan Send	Disable
◆ Internet Fax Send (Incl. PC-Internet Fax)	Disable
◆ Fax Send (Incl. PC-Fax)	Enable

Item	Factory default setting
◆ Scan to HDD	Disable
● Administrator Authority Setting	
▶ Delete File	Disable
▶ Delete Folder	Disable
● Default Colour Mode Settings	
▶ Colour	Auto
▶ B/W	Mono 2
● Default Exposure Settings	
▶ Exposure	Auto
▶ Original Image Type	Text
▶ Moiré Reduction	Disable
● Initial Resolution Setting	600x600dpi
● Colour Data Compression Ratio Setting	Medium
● Default Output Tray*16	Varies depending on the machine configuration
● Scan Complete Sound Setting	Middle
● Delete All Quick Files	
▶ Delete	-
▶ Delete quick files at power up. (Protected file excluded)	Enable
● Disable Stamp for Reprinting	Disable
● Batch Print Settings	
▶ Selection of [All Users] is not allowed.	Enable
▶ Selection of [User Unknown] is not allowed.	Enable
■ List Print (Administrator)	
● Administrator Settings List	
▶ Copy	-
▶ Print	-
▶ Image Send*14	-
▶ Document Filing	-
▶ Security	-
▶ Common	-
▶ All Administrator Settings List	-
● Image Sending Activity Report*14	
▶ Image Sending Activity Report (Scanner)	-
▶ Image Sending Activity Report (Internet Fax)	-
▶ Image Sending Activity Report (Fax)	-
● Anti Junk Fax Number List*6	-
● Anti Junk Mail/Domain Name List*5	-
● Inbound Routing List*14	-
● Document Admin List*14	-
● Web Setting List*15	-
● Metadata Set List*17	
■ Security Settings	
● SSL Settings	
▶ HTTPS	Disable
▶ IPP-SSL	Disable
■ Enable/Disable Settings	
● User Control	
▶ Disabling of Printing by Invalid User	Disable
● Operation Settings	
▶ Cancel Auto Clear Timer	Disable
▶ Disabling of Job Priority Operation	Disable
▶ Disabling of Bypass Printing	Disable
▶ Disable Auto Key Repeat	Disable
▶ Disabling of Clock Adjustment	Disable
▶ Disabling of Covers/Inserts Mode	Disable
● Device Control	
▶ Disabling of Document Feeder*3	Disable
▶ Disabling of Duplex	Disable
▶ Disabling of Large Capacity Cassette*7	Disable
▶ Disabling of Optional Paper Drawer*8	Disable
▶ Disabling of Tray Setting	Disable
▶ Disabling of Finisher*9	Disable

Item	Factory default setting
▶ Disabling of Offset	Disable
▶ Disabling of Stapler*9	Disable
▶ Disabling of Punch*11	Disable
▶ Disabling of Colour Mode*12	Disable
▶ Disabling of Master Machine Mode	Disable
▶ Disabling of Slave Machine Mode	Disable
● Copy Settings	
▶ Disable Copy in Different Size/ Direction	Disable
▶ Disabling Deletion of Job Programs	Disable
▶ Disabling of Bypass-Tray in Duplex Copy	Disable
▶ Disabling of Auto Paper Selection	Disable
● Printer settings	
▶ Prohibit Notice Page Printing	Enable
▶ Prohibit Test Page Printing	Disable
▶ Exclude Bypass-Tray from Auto Paper Select	Disable
● Image Send Settings	
▶ Disable Switching of Display Order	Disable
▶ Disable Scan Function	
◆ PC Scan	Disable
◆ USB Memory Scan	Disable
▶ Settings to Disable the Registration of Destination	
◆ Disable Registering Destination from Operation Panel	
• Group	Disable
• E-mail	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable Registering Destination on Web Page*15	
• Group	Disable
• E-mail	Disable
• FTP	Disable
• Desktop	Disable
• Network Folder	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable Registration Using Network Scan Tools*15	Disable
▶ Settings to Disable Transmission	
◆ Disable [Resend] on Fax/Image Send Mode	Disable
◆ Disable selection from the Address Book	
• E-mail	Disable
• FTP	Disable
• Desktop	Disable
• Network Folder	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable Direct Entry	
• E-mail	Disable
• Internet Fax	Disable
• Fax	Disable
◆ Disable PC-Internet Fax Transmission*5	Disable
◆ Disable PC-Fax Transmission*6	Disable
● Document Filing Settings	
▶ Disable Stamp for Reprinting	Disable
▶ Batch Print Settings	
◆ Selection of [All Users] is not allowed.	Enable
◆ Selection of [User Unknown] is not allowed.	Enable
■ Change Administrator Password	See "TO THE ADMINISTRATOR OF THE MACHINE" in the Safety Guide.
■ Product Key*18	
● Network Scanner Expansion Kit	-
● Printer Expansion Kit	-
● PS3 Expansion Kit	-

Item	Factory default setting
● Internet Fax Expansion Kit	-
● E-mail Alert and Status	-
● Application Integration Module	-
● Serial Number	-
■ Storing/calling of System Settings	
● Restore Factory Defaults	-
● Store Current Configuration	-
● Restore Configuration	-

*1: In some countries and regions, the printer expansion kit must be installed.

*2: This function is not available in some countries and regions.

*3: When an automatic document feeder is installed.

*4: In some countries and regions, the network scanner expansion kit must be installed.

*5: When the Internet fax expansion kit is installed.

*6: When the facsimile expansion kit is installed.

*7: When a large capacity tray is installed.

*8: When a paper drawer is installed.

*9: When a saddle stitch finisher or finisher is installed.

*10: When a saddle stitch finisher is installed.

*11: When a punch module is installed.

*12: When a colour-related problem has occurred.

*13: When the PS3 expansion kit is installed.

*14: In some countries and regions, the facsimile expansion kit or the Internet fax expansion kit or the network scanner expansion kit must be installed.

*15: When network connection is enabled.

*16: When a right tray is installed.

*17: When the application integration module is installed.

*18: Depending on the peripheral devices installed, it may not be possible to use some settings.

2. Paper JAM code

A. JAM cause code list

(1) PCU JAM cause

Code	Code content
NO_JAM_CAUSE	No JAM. Also used for JAM canceling.
NO_MATCH	Parameter no matching
STOP_JAM	Emergency stop request JAM (Controller request)
TRAY1	Cassette 1 paper feed JAM (CPFD1 not-reached JAM)
CPFD1_S1	CPFD1 remaining JAM (Cassette 1 feed paper)
CPFD1_N2	CPFD1 not-reached JAM (Cassette 2 feed paper)
CPFD1_N3	CPFD1 not-reached JAM (Desk 1 feed paper)
CPFD1_N4	CPFD1 not-reached JAM (Desk 2 feed paper)
CPFD1_S2	CPFD1 remaining JAM (Desk 2 feed paper)
CPFD1_S3	CPFD1 remaining JAM (Desk 1 feed paper)
CPFD1_S4	CPFD1 remaining JAM (Desk 2 feed paper)
TRAY2	Cassette 2 paper feed JAM (CPFD2 not-reached JAM)
CPFD2_N3	CPFD2 not-reached JAM (Desk 1 feed paper)
CPFD2_N4	CPFD2 Not-reached JAM (Desk 2 feed paper)
CPFD2_S2	CPFD2 remaining JAM (Cassette 2 feed paper)
CPFD2_S3	CPFD2 remaining JAM (Desk 1 feed paper)
CPFD2_S4	CPFD2 remaining JAM (Desk 2 feed paper)
PPD1_N1	PPD1 not-reached JAM (Cassette 1 feed paper)
PPD1_N2	PPD1 not-reached JAM (Cassette 2 feed paper)
PPD1_N3	PPD1 not-reached JAM (Desk 1 feed paper)
PPD1_N4	PPD1 not-reached JAM (Desk 2 feed paper)
PPD1_NM	PPD1 not-reached JAM (Manual feed tray feed paper)
PPD1_NL	PPD1 not-reached JAM (Side LCC feed paper)
PPD1_NA	PPD1 not-reached JAM (ADU refeed paper)
PPD1_S1	PPD1 remaining JAM (Cassette 1 feed paper)
PPD1_S2	PPD1 remaining JAM (Cassette 2 feed paper)
PPD1_S3	PPD1 remaining JAM (Desk 1 feed paper)
PPD1_S4	PPD1 remaining JAM (Desk 2 feed paper)
PPD1_SM	PPD1 remaining JAM (Manual 2 feed paper)
PPD1_SL	PPD1 remaining JAM (Side LCC feed paper)
PPD1_SA	PPD1 remaining JAM (ADU refeed paper)
PPD2_N1	PPD2 not-reached JAM (Cassette 1 feed paper)
PPD2_N2	PPD2 not-reached JAM (Cassette 2 feed paper)
PPD2_N3	PPD2 not-reached JAM (Desk 1 feed paper)
PPD2_N4	PPD2 not-reached JAM (Desk 2 feed paper)
PPD2_NM	PPD2 not-reached JAM (Manual feed tray feed paper)
PPD2_NL	PPD2 not-reached JAM (Side LCC feed paper)
PPD2_NA	PPD2 not-reached JAM (ADU refeed paper)
PPD2_S1	PPD2 remaining JAM (Cassette 1 feed paper)
PPD2_S2	PPD2 remaining JAM (Cassette 2 feed paper)
PPD2_S3	PPD2 remaining JAM (Desk 1 feed paper)
PPD2_S4	PPD2 remaining JAM (Desk 2 feed paper)
PPD2_SM	PPD2 remaining JAM (Manual feed tray feed paper)
PPD2_SL	PPD2 remaining JAM (Side LCC feed paper)
PPD2_SA	PPD2 remaining JAM (ADU refeed paper)
PPD2_PRI	PPD2 JAM (Image preparation wait timeout)
POD1_N	POD1 not-reached JAM
POD1_S	POD1 remaining JAM
POD2_N	POD2 not-reached JAM
POD2_S	POD2 remaining JAM
POD3_N	POD3 not-reached JAM
POD3_S	POD3 remaining JAM
APPD1_N	APPD1 not-reached JAM
APPD1_S	APPD1 remaining JAM
APPD2_N	APPD2 not-reached JAM
APPD2_S	APPD2 remaining JAM
TRAY3	Cassette 3 (Desk 1) paper feed JAM
DPFD1_N4	DPFD1 not-reached JAM (Desk 2 feed paper)
DPFD1_S3	DPFD1 remaining JAM (Desk 1 feed paper)
DPFD1_S4	DPFD1 remaining JAM (Desk 2 feed paper)
TRAY4	Cassette 4 (Desk 2) paper feed JAM
DPFD2_S4	DPFD2 remaining JAM (Desk 2 feed paper)
MFT	Manual feed tray paper feed JAM (MPFD not-reached)
MPFD_S	MPFD remaining JAM (Manual feed tray feed paper)
LCC	Side LCC paper feed JAM (LPFD1 not-reached)
LPFD_SL	LPFD remaining JAM (Side LCC feed paper)
SIZE_ILG	Size illegal JAM
MTR_ILG	Motor driver trouble JAM
FJPID_N	Interface transport inlet port sensor not-reached JAM
FJPID_S	Interface transport inlet port sensor remaining JAM
FJPOD_N	Interface transport outlet sensor not-reached JAM
FJPOD_S	Interface transport outlet sensor remaining JAM
FED_N	Finisher inlet port sensor not-reached JAM
FED_S	Finisher inlet port sensor remaining JAM
FFPD_N	Finisher saddle not-reached JAM
FFPD_S	Finisher saddle remaining JAM
FEXIT_S	Finisher bundle exit remaining JAM
FSTPL	Staple JAM
FPNCH	Punch JAM
FDOP	Finisher door open
FIN_TIME	Finisher paper clearance abnormality JAM

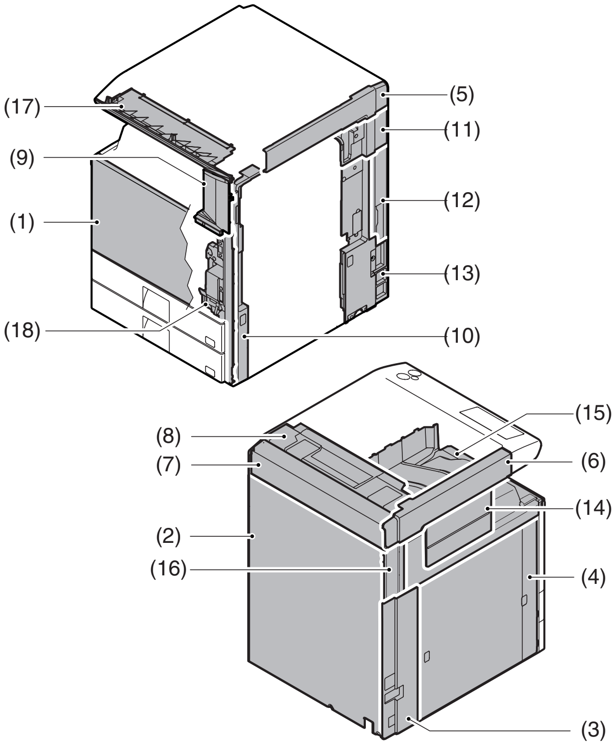
(2) SCU JAM cause

Code	Code content
NO_JAM_CAUSE	No JAM. Also used for JAM canceling.
NO_MATCH	Parameter no matching
STOP_JAM	Emergency stop request JAM (Controller request)
SPPD1_N	SPPD1 not-reached JAM
SPPD1_S	SPPD1 remaining JAM
SPPD2_N	SPPD2 not-reached JAM
SPPD2_S	SPPD2 remaining JAM
SPPD3_N	SPPD3 not-reached JAM
SPPD3_S	SPPD3 remaining JAM
SPPD4_N	SPPD4 not-reached JAM
SPPD4_S	SPPD4 remaining JAM
SPPD5_N	SPPD5 not-reached JAM
SPPD5_S	SPPD5 remaining JAM
SPOD_N	SPOD not-reached JAM
SPOD_S	SPOD remaining JAM
SPRDMD_S	SPRDMD remaining JAM
SPSD_SCN	Exposure start notification wait timeout
SPPD2_NR	SPPD2 reverse not-reached JAM
SPPD2_SR	SPPD2 reverse remaining JAM
ICU_REQ	ICU factor stop JAM

[A] EXTERNAL OUTFIT

1. Disassembly and assembly

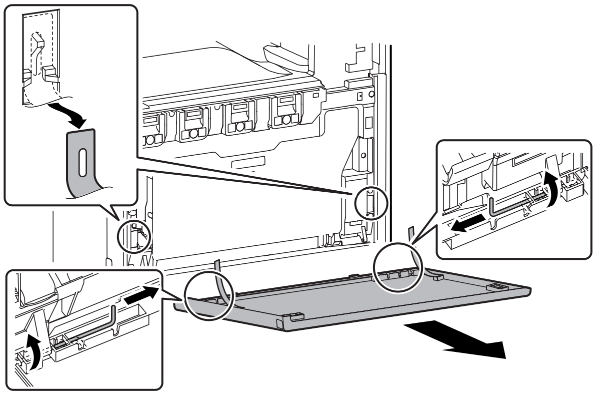
A. Cabinet



	Parts
(1)	Front cabinet
(2)	Rear cabinet
(3)	Left cabinet rear lower
(4)	Left cabinet
(5)	Upper cabinet right
(6)	Upper cabinet left.
(7)	Upper cabinet rear cover
(8)	Upper cabinet rear
(9)	Front cabinet upper
(10)	Right cabinet front
(11)	Right connection cabinet
(12)	Right cabinet rear cover
(13)	Right cabinet rear
(14)	Paper exit cover
(15)	Paper exit tray cabinet
(16)	Left cabinet rear
(17)	Operation panel base plate
(18)	Frame cover

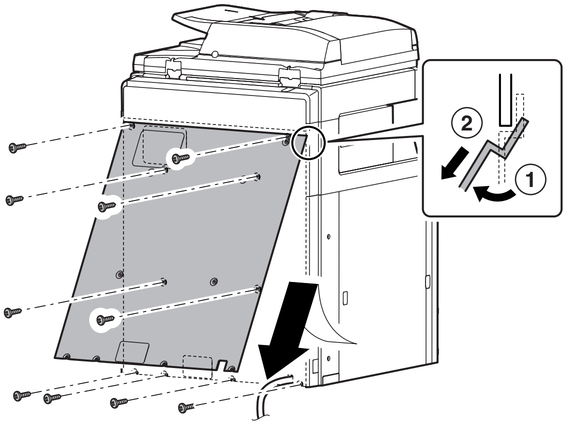
(1) Front cabinet

1) Remove the front cabinet band and the front cabinet hinge, and remove the front cabinet.



(2) Rear cabinet

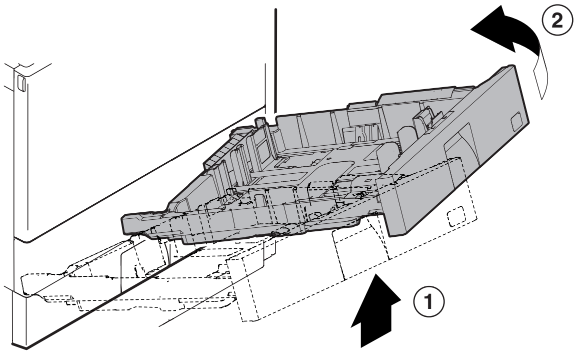
1) Remove the screws, and remove the rear cabinet.



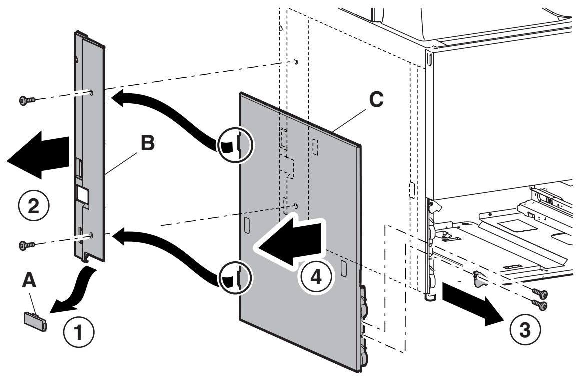
(3) Left cabinet rear lower

(4) Left cabinet

1) Remove the paper feed tray 1 and 2.



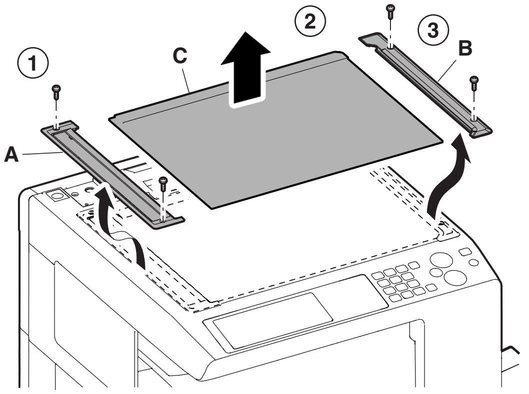
2) Remove the desk connection cover (A). Remove the screws, then remove the left cabinet rear lower (B) and the left cabinet (C).



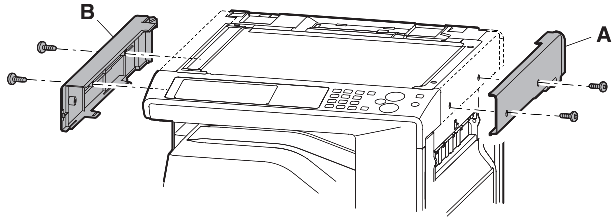
(5) Upper cabinet right

(6) Upper cabinet left.

1) Remove the SPF glass (A). Remove the glass holder (B) and the table glass (C).

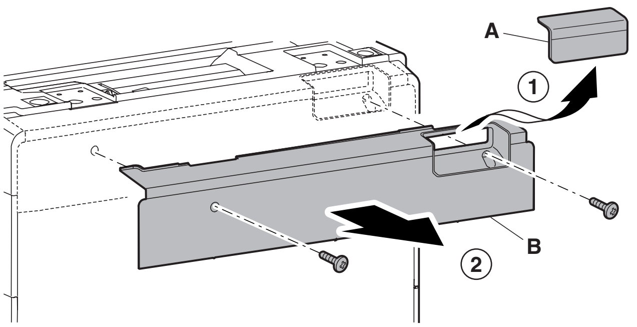


2) Remove the screws, and remove the upper cabinet right (A) and the upper cabinet left (B).



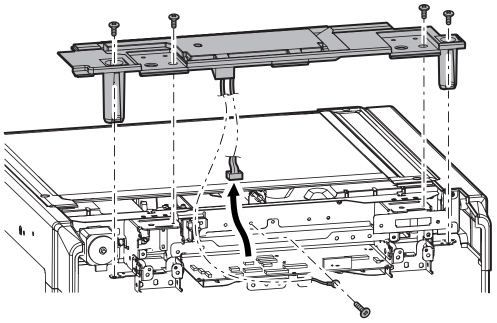
(7) Upper cabinet rear cover

1) Remove the upper cabinet rear cover lid (A). Remove the screws, and remove the upper cabinet rear cover (B).



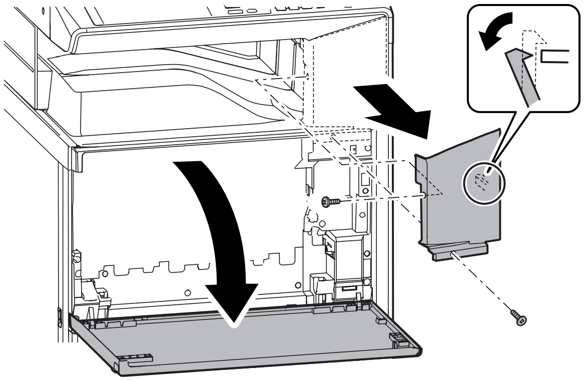
(8) Upper cabinet rear

1) Remove the upper cabinet rear cover.
2) Disconnect the connector. Remove the screws, and remove the grounding wire. Remove the screws, and remove the upper cabinet rear.



(9) Front cabinet upper

1) Open the front cabinet. Remove the screws, and remove the front cabinet upper.



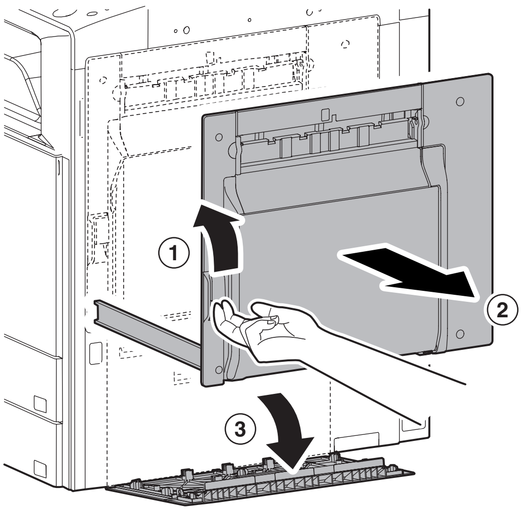
(10) Right cabinet front

(11) Right connection cabinet

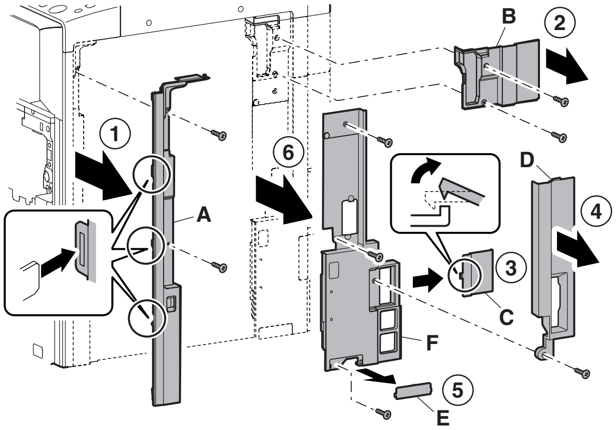
(12) Right cabinet rear cover

(13) Right cabinet rear

1) Remove the front cabinet upper. (Refer to Front Cabinet Upper.)
2) Open the right door and the right cabinet lower.



3) Remove the screws, and remove the right cabinet front (A). Remove the screws, and remove the right connection cabinet (B). Remove the ozone filter cover (C). Remove the screws, and remove the right cabinet rear cover (D). Remove the desk connection cover (E). Remove the screws, and remove the right cabinet rear (F).



(14) Paper exit cover

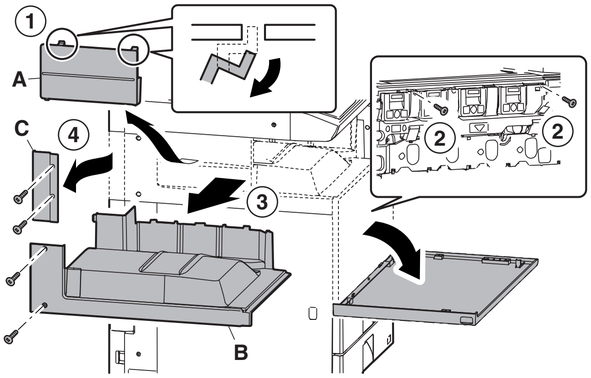
(15) Paper exit tray cabinet

(16) Left cabinet rear

1) Remove the paper exit cover (A). Open the front cabinet and remove the screws.

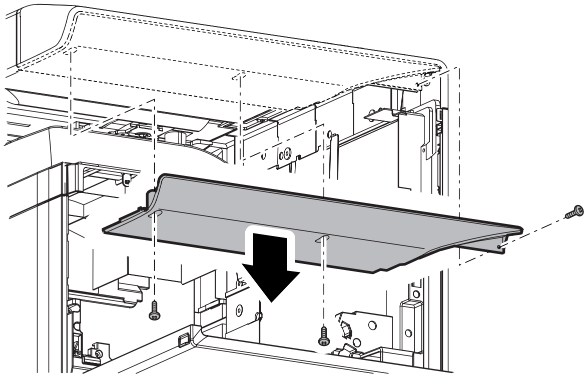
   Remove the screws, and remove the paper exit tray cabinet (B).

   Remove the screws, and remove the left cabinet rear (C).



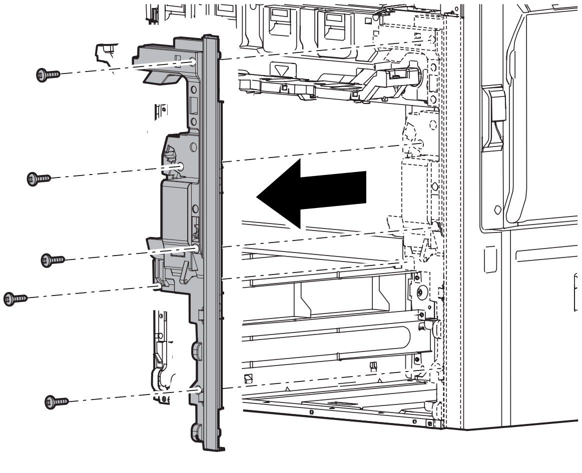
(17) Operation panel base plate

1) Remove the front cabinet upper. (Refer to Front Cabinet Upper.)
2) Remove the screws, and remove the operation panel base plate.



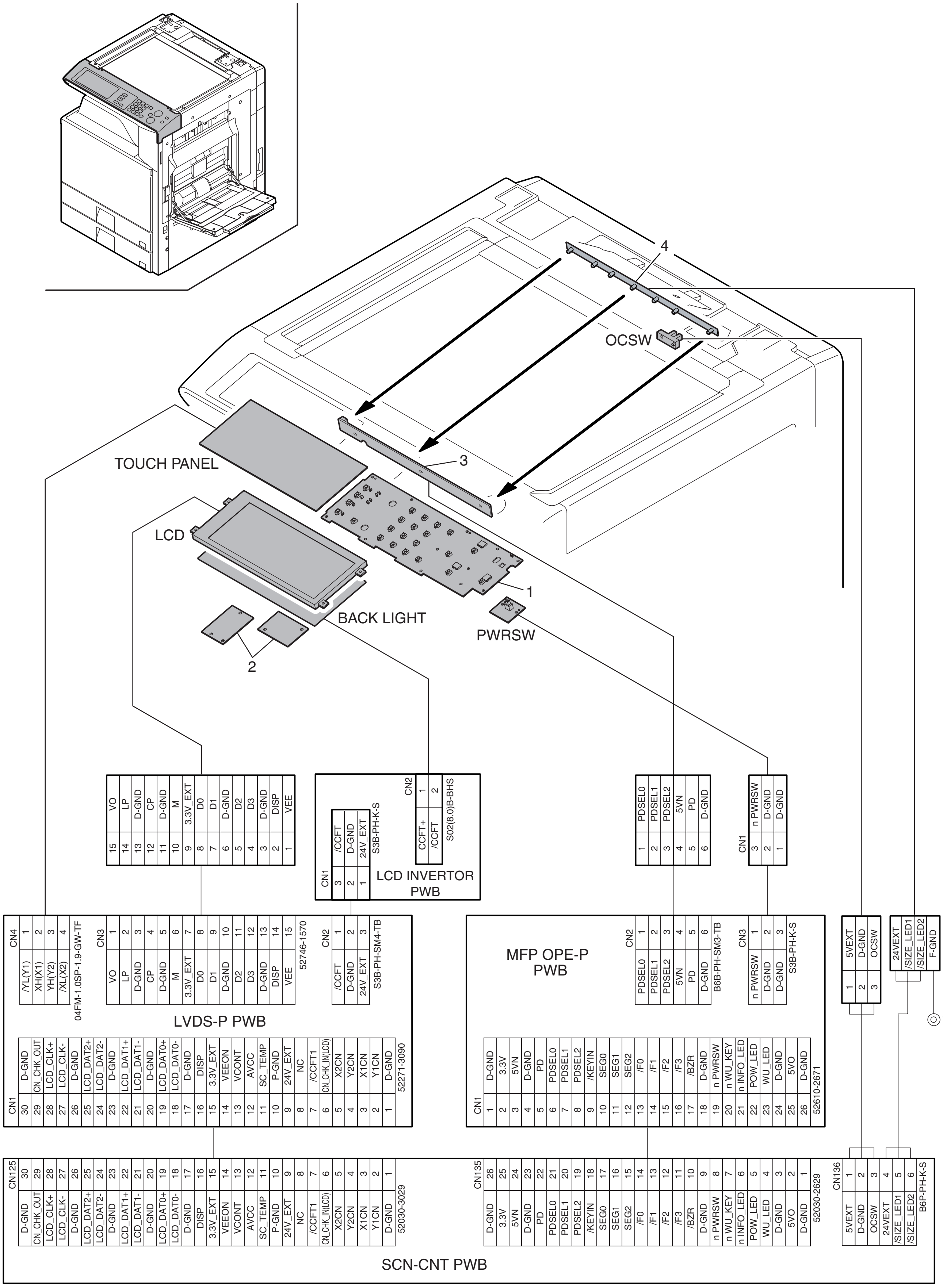
(18) Frame cover

1) Remove the waste toner box, and open the drum positioning unit. (Refer to Process Drum Unit in Image Process Section.)
2) Remove the front cabinet. (Refer to Front Cabinet)
3) Remove the front cabinet upper. (Refer to Front Cabinet Upper.)
4) Remove the screws, and remove the frame cover.



[B] OPERATION PANEL

1. Electrical and mechanism relation diagram



Pin	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	VO	LP	D-GND	CP	D-GND	M	3.3V_EXT	D0	D1	D-GND	D2	D3	D-GND	DISP	VEE

LCD INVERTOR PWB

CN1	3	2	1
S3B-PH-K-S	/CCFT	D-GND	24V_EXT

CN2	1	2
S02(8.0)B-BHS	CCFT+	/CCFT

Pin	1	2	3	4	5	6
	PDSEL0	PDSEL1	PDSEL2	5VN	PD	D-GND

CN1	3	2	1
	n PWRSW	D-GND	D-GND

LVDS-P PWB

CN4	1	2	3	4
04FM-1.0SP-1.9-GW-TF	/YL(Y1)	XH(X1)	YH(Y2)	/XL(X2)

CN3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
52746-1570	VO	LP	D-GND	CP	D-GND	M	3.3V_EXT	D0	D1	D-GND	D2	D3	D-GND	DISP	VEE

CN2	1	2	3
S3B-PH-SM4-TB	/CCFT	D-GND	24V_EXT

CN1	52271-3090
30	D-GND
29	CN_CHK_OUT
28	LCD_CLK+
27	LCD_CLK-
26	D-GND
25	LCD_DAT2+
24	LCD_DAT2-
23	D-GND
22	LCD_DAT1+
21	LCD_DAT1-
20	D-GND
19	LCD_DAT0+
18	LCD_DAT0-
17	D-GND
16	DISP
15	3.3V_EXT
14	VEEON
13	VCONT
12	AVCC
11	SC_TEMP
10	P-GND
9	24V_EXT
8	NC
7	/CCFT1
6	CN_CHK_IN(LCD)
5	X2CN
4	Y2CN
3	X1CN
2	Y1CN
1	D-GND

MFP OPE-P PWB

CN2	1	2	3	4	5	6
B6B-PH-SM3-TB	PDSEL0	PDSEL1	PDSEL2	5VN	PD	D-GND

CN3	1	2	3
S3B-PH-K-S	n PWRSW	D-GND	D-GND

CN1	52610-2671
1	D-GND
2	3.3V
3	5VN
4	D-GND
5	PD
6	PDSEL0
7	PDSEL1
8	PDSEL2
9	/KEYIN
10	SEG0
11	SEG1
12	SEG2
13	/F0
14	/F1
15	/F2
16	/F3
17	/BZR
18	D-GND
19	n PWRSW
20	n WU_KEY
21	n INFO_LED
22	POW_LED
23	WU_LED
24	D-GND
25	5VO
26	D-GND

Pin	1	2	3
	5VEXT	D-GND	OCSW

24VEXT	/SIZE_LED1	/SIZE_LED2	F-GND

SCN-CNT PWB

CN125	52030-3029
30	D-GND
29	CN_CHK_OUT
28	LCD_CLK+
27	LCD_CLK-
26	D-GND
25	LCD_DAT2+
24	LCD_DAT2-
23	D-GND
22	LCD_DAT1+
21	LCD_DAT1-
20	D-GND
19	LCD_DAT0+
18	LCD_DAT0-
17	D-GND
16	DISP
15	3.3V_EXT
14	VEEON
13	VCONT
12	AVCC
11	SC_TEMP
10	P-GND
9	24V_EXT
8	NC
7	/CCFT1
6	CN_CHK_IN(LCD)
5	X2CN
4	Y2CN
3	X1CN
2	Y1CN
1	D-GND

CN135	52030-2629
26	D-GND
25	3.3V
24	5VN
23	D-GND
22	PD
21	PDSEL0
20	PDSEL1
19	PDSEL2
18	/KEYIN
17	SEG0
16	SEG1
15	SEG2
14	/F0
13	/F1
12	/F2
11	/F3
10	/BZR
9	D-GND
8	n PWRSW
7	n WU_KEY
6	n INFO_LED
5	POW_LED
4	WU_LED
3	D-GND
2	5VO
1	D-GND

CN136	1	2	3	4	5	6
B6P-PH-K-S	5VEXT	D-GND	OCSW	24VEXT	/SIZE_LED1	/SIZE_LED2

Signal	Name	Function/Operation
OCSW	Original cover SW	Timing switch for document size detection
PWRSW	Operaton panel power supply switch	Outputs the DC power supply ON/OFF control signal.

No.	Name	Function/Operation
1	MFP OPE-P PWB	Detects the key pressed on the operation panel.
2	LCD INV PWB/LVDS PWB	Drives LCD and the backlight, and controls the touch-panel.
3	Document detection light receiving PWB	Receives the light from the document detection light emitting PWB, and detects the document size.
4	Document detection light emitting PWB	Emits light for document size detection.

2. Operational descriptions

A. Outline

The operation panel unit is composed of the MFP OPE-P PWB, the LCD INV PWB/LVDS PWB, the LCD unit, and the operation keys, and is used to operate the machine and to set and display the machine status.

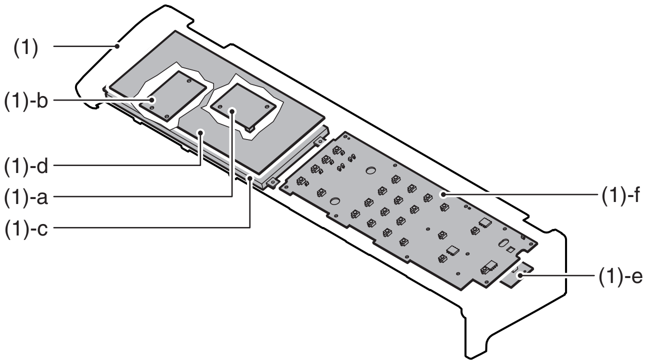
The MFP OPE-P PWB is connected to the document detection light receiving PWB for detecting the document size. It receives light from the document detection light emitting PWB attached to the rear frame, detecting the document size.

The power switch of the operation panel supplies the ON/OFF control signal of the DC power source.

3. Disassembly and assembly

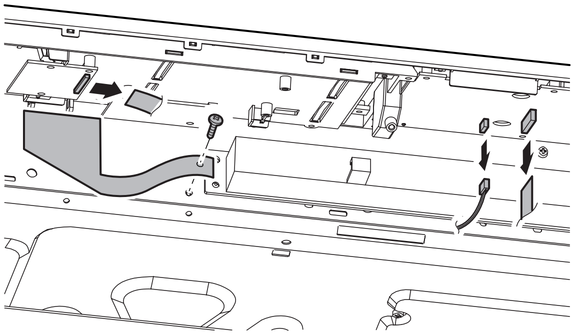
A. Operation panel section

Unit		Parts	
(1)	Operation panel unit	a	LCD INV PWB
		b	LVDS PWB
		c	LCD module
		d	Touch panel
		e	POWER SW PWB
		f	MFP OPE-P PWB

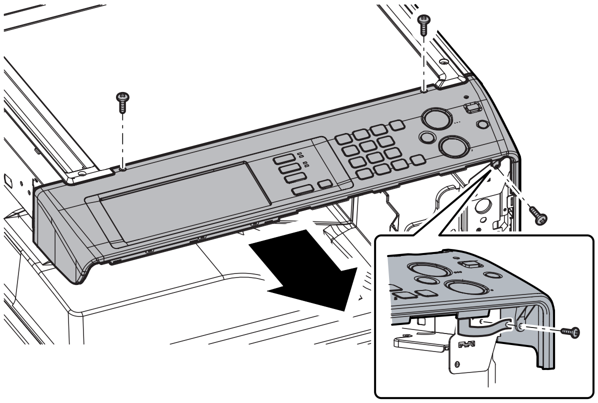


(1) Operation panel unit

1) Remove the paper exit cover and the upper cabinet left.
2) Remove the front cabinet upper and the operation panel base plate.
3) Remove each cables and the grounding sheet.



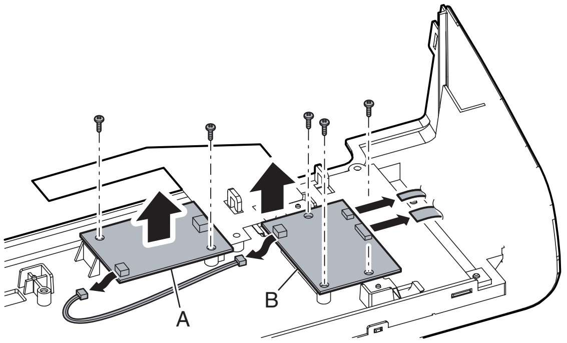
4) Remove the operation panel unit.



a. LCD INV PWB

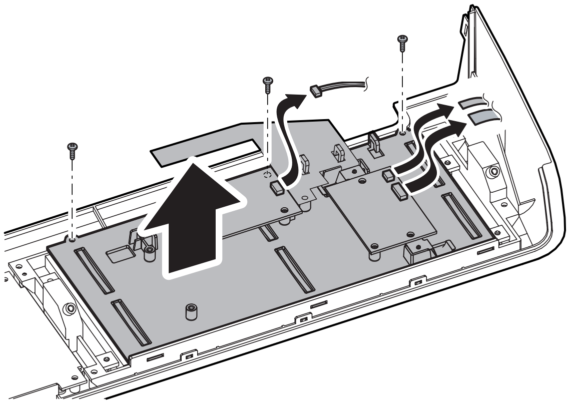
b. LVDS PWB

1) Remove the operation panel unit.
2) Remove the LCD INV PWB (A). Remove the LVDS PWB (B).

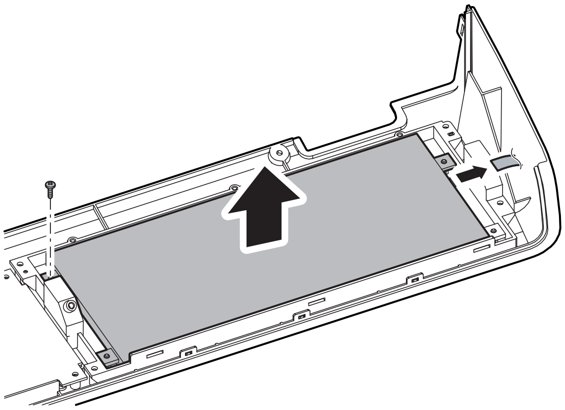


c. LCD module

1) Remove the operation panel unit.
2) Remove the LCD holder.

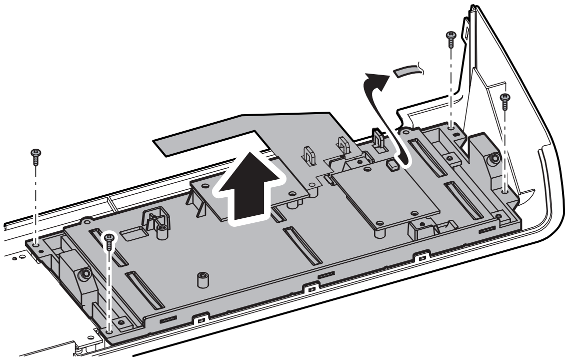


3) Remove the LCD module.

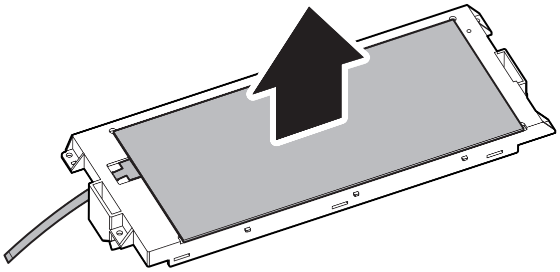


d. Touch panel

1) Remove the operation panel unit.
2) Remove the LCD unit. Remove the flat cable.

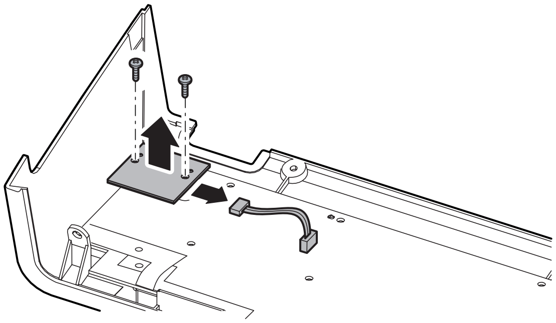


3) Remove the touch panel.



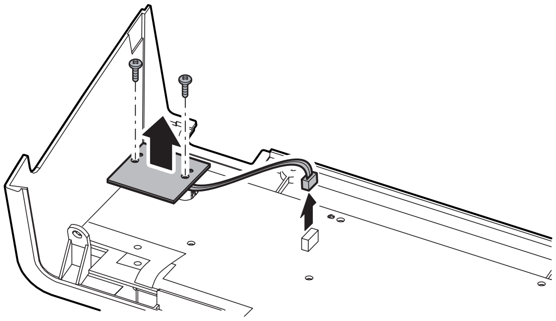
e. POWER SW PWB

1) Remove the operation panel unit.
2) Remove the POWER SW PWB.

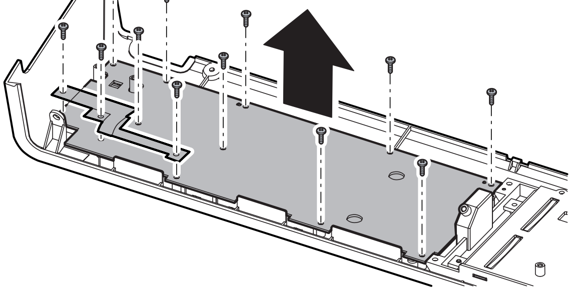


f. MFP OPE-P PWB

1) Remove the operation panel unit.
2) Remove the POWER SW PWB.

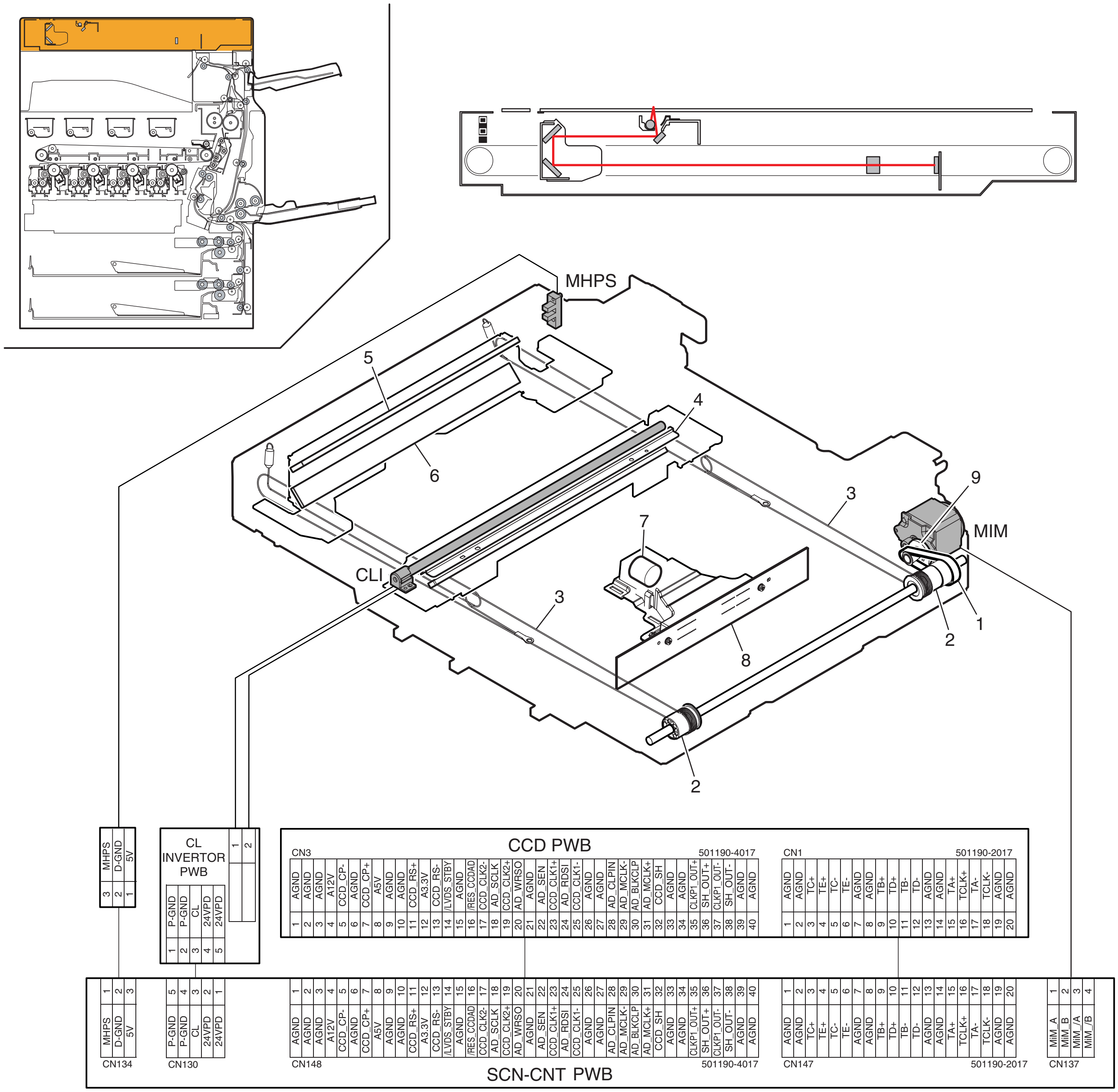


3) Remove the grounding sheet, and remove the MFP OPE-P PWB.



[C] SCANNER SECTION

1. Electrical and mechanism relation diagram


MHPS
5
4
6
3
9
MIM
7
CLI
3
1
2
8
2
MHPS D-GND 5V
3 2 1
CL INVERTOR PWB
1 2
P-GND P-GND CL 24VPD 24VPD
1 2 3 4 5
CCD PWB
CN3
501190-4017
CN1
501190-2017
AGND AGND AGND A12V CCD_CP- AGND CCD_CP+ A5V AGND AGND CCD_RS+ A3.3V CCD_RS- /LVDS_STBY AGND /RES_CCDAD CCD_CLK2- AD_SCLK CCD_CLK2+ AD_WRSO AGND AD_SEN CCD_CLK1+ AD_RDSI CCD_CLK1- AGND AGND AD_CLPIN AD_MCLK- AD_BLKCLP AD_MCLK+ CCD_SH AGND AGND CLKP1_OUT+ SH_OUT+ CLKP1_OUT- SH_OUT- AGND AGND
1–40
AGND AGND TC+ TE+ TC- TE- AGND AGND TB+ TD+ TB- TD- AGND AGND TA+ TCLK+ TA- TCLK- AGND AGND
1–20
1 2 3
MHPS D-GND 5V
CN134
5 4 3 2 1
P-GND P-GND CL 24VPD 24VPD
CN130
CN148
501190-4017
CN147
501190-2017
1 2 3 4
MIM_A MIM_B MIM_/A MIM_/B
CN137
SCN-CNT PWB

Signal	Name	Function/Operation
CLI	Scanner lamp	Illuminates the document. (Xenon lamp)
MHPS	Scanner home position sensor	Detects the home position of the copy lamp unit.
MIM	Scanner motor	Drives the copy lamp unit and the mirror base unit.

No.	Name	Function/Operation
1	Pulley belt	Transmits the scanner motor power to the pulley.
2	Pulley	Drives the scanner drive wire.
3	Scanner drive wire	Transmits the scanner motor power to the copy lamp unit and the mirror base unit.
4	Reflector	Condenses the copy lamp light.
5	No. 2 mirror	Inducts the document image into the No.3 mirror.
6	No. 3 mirror	Inducts the document image into the lens.
7	Lens	Reduces the document image (light), and project it on CCD.
8	CCD PWB	Reads the document image (optical signal) and converts it into the electric signal.
9	Idle gear	Transmits the scanner motor power to the belt.

2. Operational descriptions

A. Outline

This section functions and operates as follows:

1) The copy lamp radiates light onto the document, and the reflected light is scanned by the three line (RGB) CCD element and then converted into image signals (analog).
2) The image signals (analog) are converted into 10bit digital signals by the A/D converter.
3) The image signals (digital) are sent to the image process section (scanner control PWB).

B. Detail description

(1) Optical section drive

The optical section drive power is transmitted from the scanner motor (MIM) through the belt, the drive pulley, and the wire to drive the copy lamp unit and the mirror base which are attached by the drive wires.

The scanner motor (MIM) is controlled by the drive signal sent from the scanner control PWB.

(2) Scanner lamp drive

The scanner lamp (CLI) is driven by the scanner lamp drive voltage generated in the CL inverter PWB according to the control signal sent from the scanner control PWB.

(3) Image scan/color separation

Light is radiated to a document by the scanner lamp, and the brightness of the reflected light is received by the three line (RGB) CCD element and converted into (analog) image signals.

Each color component of RGB is separately extracted from the document image by the three lines (RGB) of the CCD elements.

The red CCD extracts the red components from the document image, the green CCD the green components, and the blue CCD the blue components. This operation is called Color Separation.

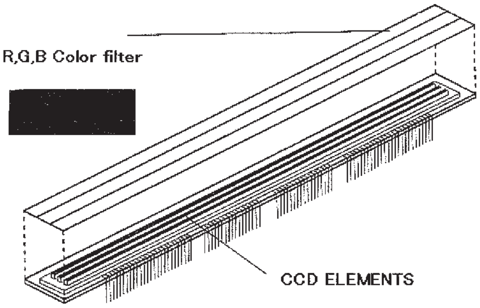
The CCD element, appeared as one unit, but has three separate rows of CCD elements drive each for (RGB).

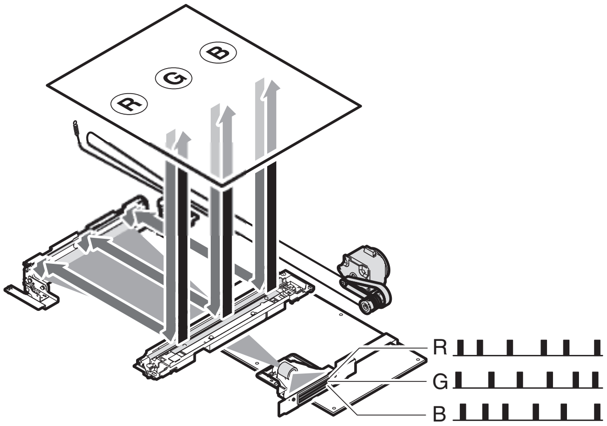
Scanning of a document in the main scanning direction is performed by the CCD elements. Scanning of a document in the sub scanning direction is performed by shifting the scanner unit position with the scanner motor.

Document images are optically reduced by the lens and projected to the CCD elements.

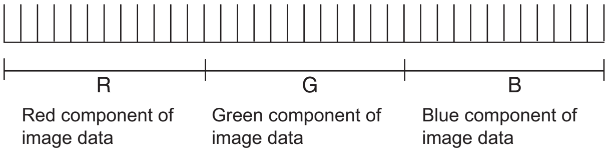
Scanning resolution is 600 dpi.

3 LINES CCD UNIT





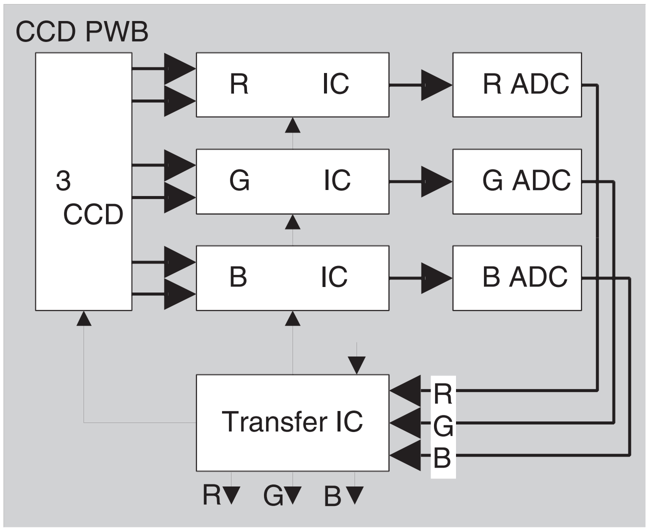
(Image data per 1 line)


R
G
B
Red component of image data
Green component of image data
Blue component of image data

(4) Image signal A/D conversion

1) Each image signal (analog) of RGB is converted into 10bit digital signal by the A/D converter.

   Each color pixel has 10bit information (256 gradations).
2) Each 10bit digital image signal of RGB is sent to the image process section.



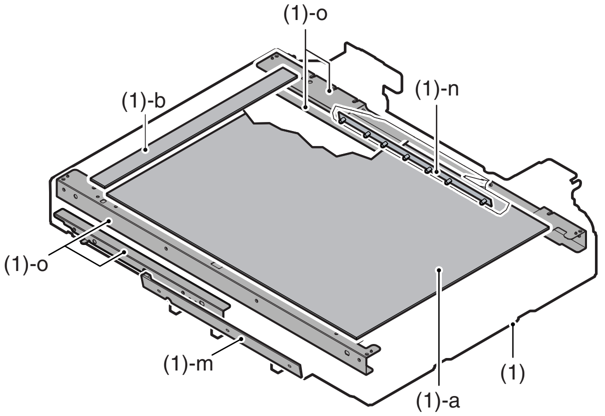
(5) Zooming operation

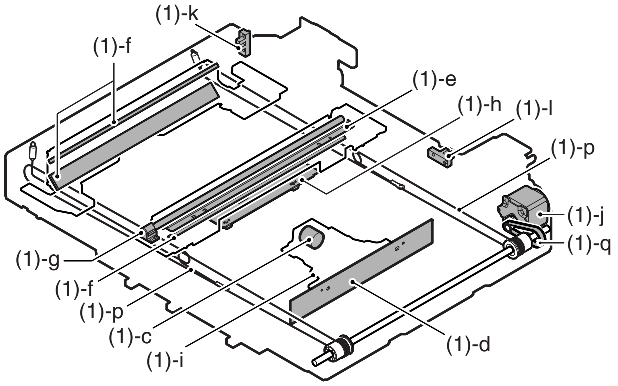
Zooming in the sub scanning direction is performed by changing the scanning speed in the sub scanning direction.

Zooming in the main scanning direction is not performed optically but by the image process technology (software).

3. Disassembly and assembly

A. Optical system

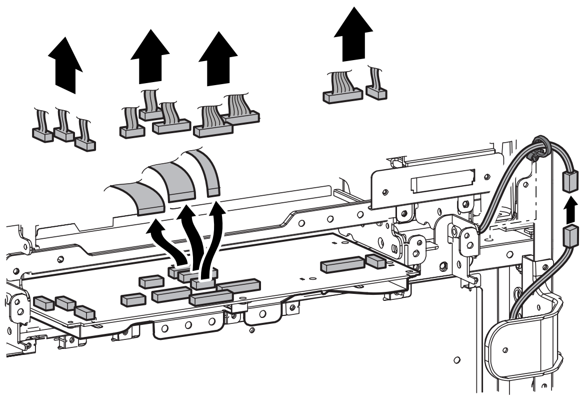




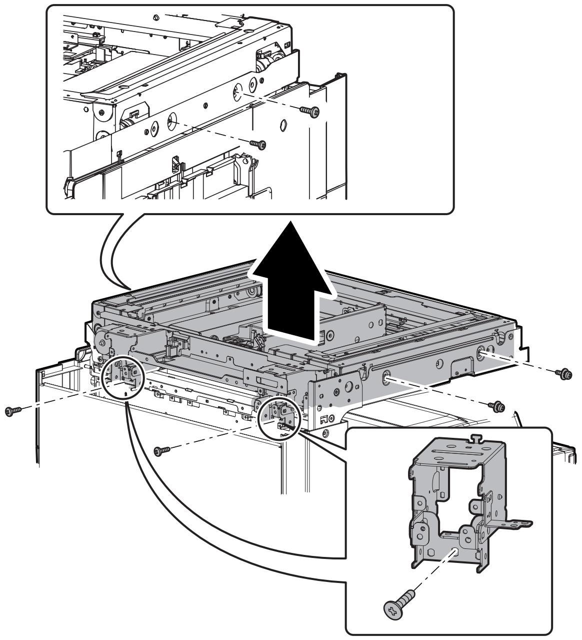
Unit		Parts		Maintenance
(1)	Scanner unit	a	Table glass	○
		b	SPF glass	○
		c	Lens	○
		d	CCD	○
		e	Reflector	○
		f	Mirrors	○
		g	Lamp	○
		h	CL inverter PWB	
		i	CCD unit	
		j	Scanner motor	
		k	Scanner home position sensor	
		l	Original cover SW	
		m	Document detection light receiving PWB	
		n	Document detection light emitting PWB	
		o	Rails	☆
		p	Drive wire	×
		q	Drive belt	×

(1) Scanner unit

1) Remove the upper cabinet rear cover and the upper cabinet rear.
2) Remove the table glass and the SPF glass.
3) Remove the upper cabinet right and the upper cabinet left.
4) Disconnect the connector and remove the snap band.



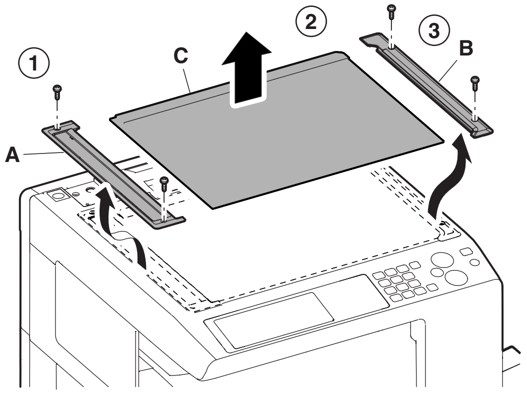
5) Remove the screws, and remove the scanner unit.



a. Table glass

b. SPF glass

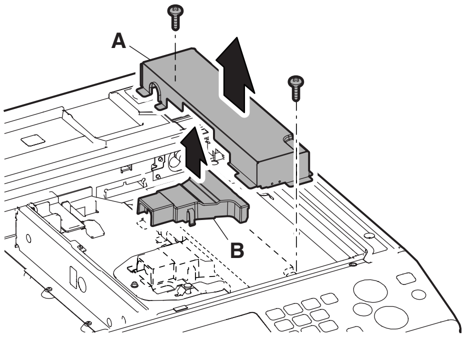
1) Remove the SPF glass (A). Remove the glass holder (B) and the table glass (C).



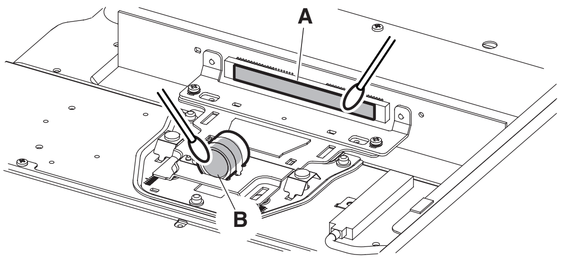
c. Lens

d. CCD

1) Remove the glass holder and the table glass.
2) Remove the dark box cover (A) and the lens cover (B).



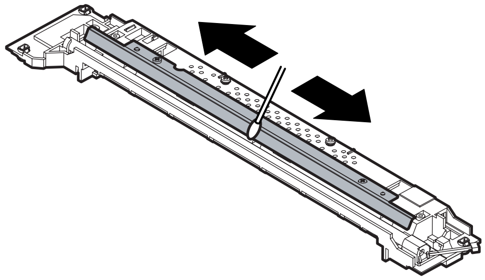
3) Clean the lens (A) and CCD (B).

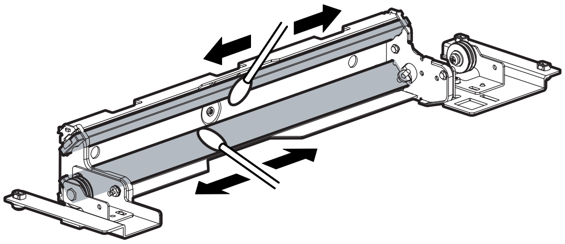


e. Reflector

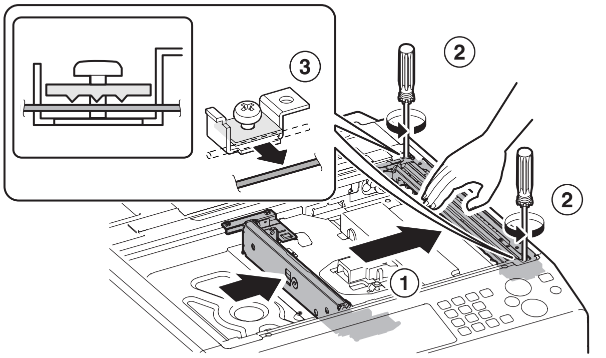
f. Mirrors

1) Remove the glass holder and the table glass.
2) Shift the lamp unit and the mirror unit.
3) Clean the reflector and No. 2 and 3 mirrors.

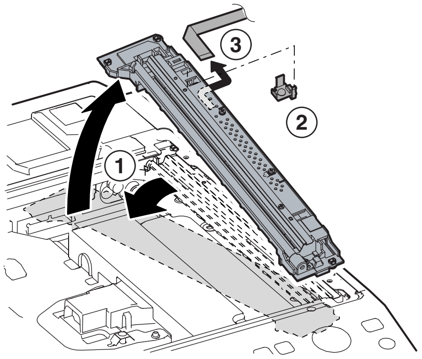




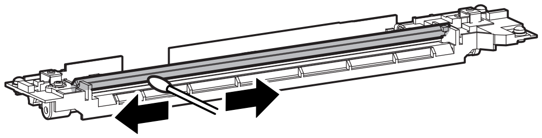
4) Shift the lamp unit to the right end. Loosen the screws and remove the wire.



5) While rotating the lamp unit, lift the lamp unit. Remove the harness holder and the flat cable. Remove the lamp unit.



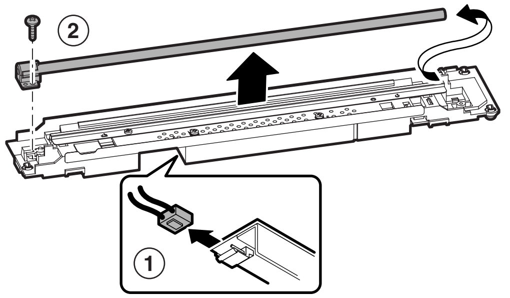
6) Clean the mirrors.



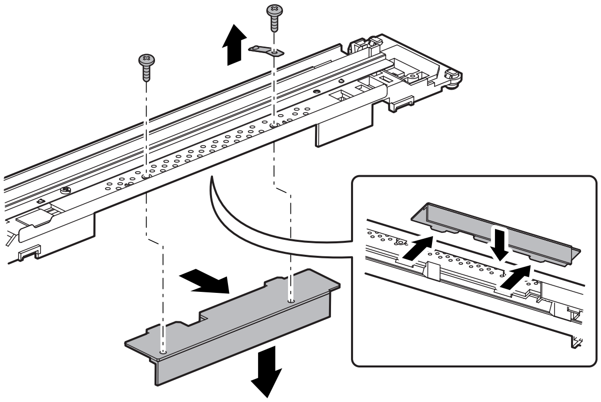
g. Lamp

h. CL inverter PWB

1) Remove the table glass and the SPF glass.
2) Remove the lamp unit.
3) Disconnect the connector and remove the lamp.

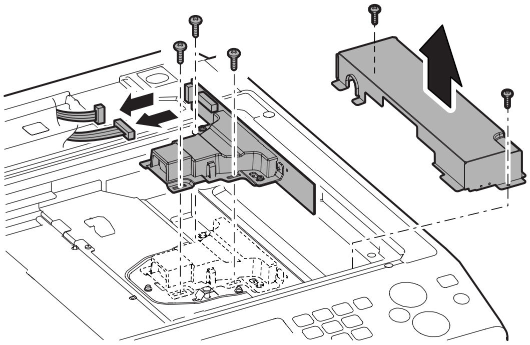


4) Remove the CL inverter PWB.



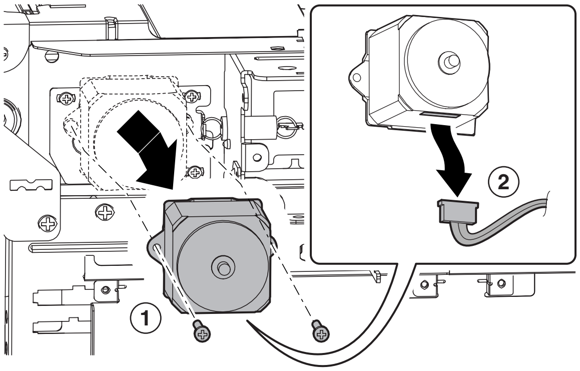
i. CCD unit

1) Remove the dark box. Disconnect the connector and remove the CCD unit.



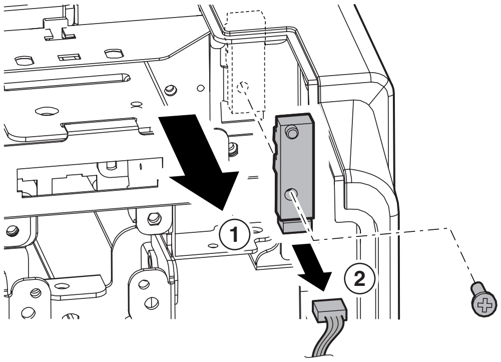
j. Scanner motor

1) Remove the upper cabinet rear cover and the upper cabinet rear.
2) Disconnect the connector, and remove the scanner motor.



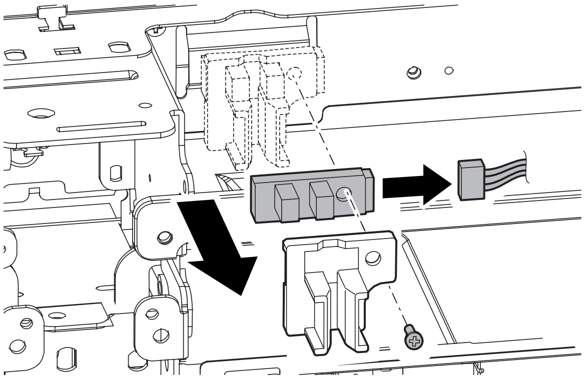
k. Scanner home position sensor

1) Remove the upper cabinet rear cover and the upper cabinet rear.
2) Disconnect the connector, and remove the scanner home position sensor.



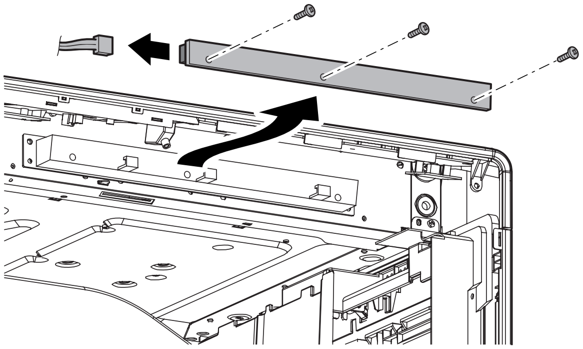
l. Original cover SW

1) Remove the upper cabinet rear cover and the upper cabinet rear.
2) Disconnect the connector, and remove the document cover SW.



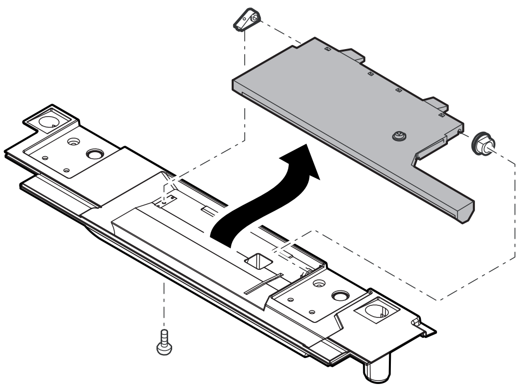
m. Document detection light receiving PWB

1) Remove the operation panel base plate.
2) Disconnect the connector and remove the document detection light receiving PWB.

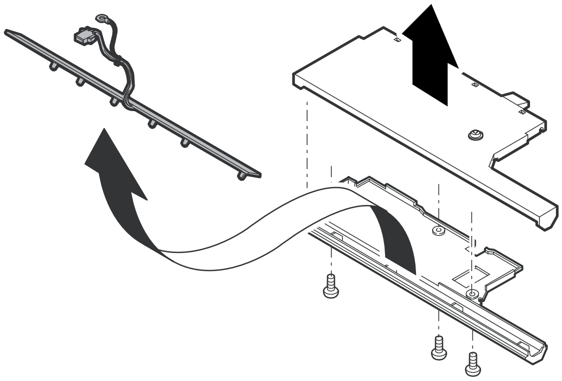


n. Document detection light emitting PWB

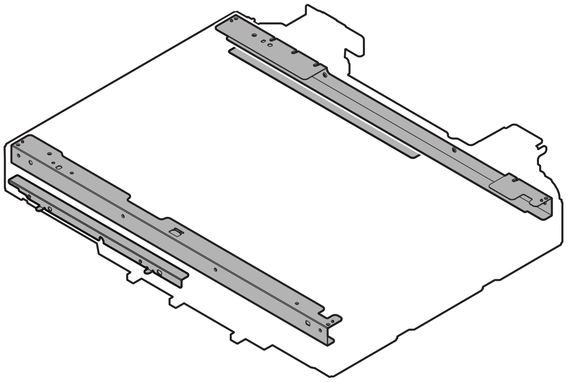
1) Remove the upper cabinet rear.
2) Remove the screws, and remove the light emitting unit.



3) Remove the document detection light emitting PWB

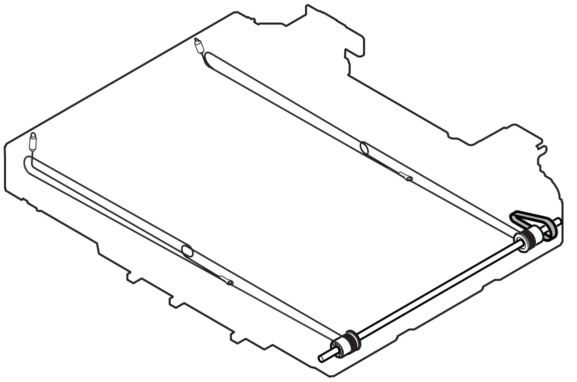


o. Rails



p. Drive wire

q. Drive belt



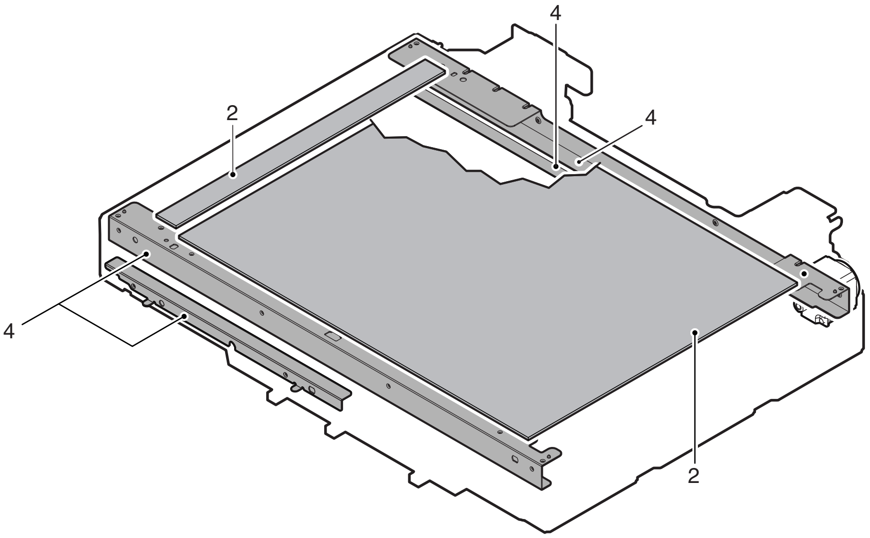
When moving the copy lamp unit manually for cleaning or adjusting the scanner section and the mirror section, be sure to turn OFF the main power source (the power switch inside the front cover) and confirm that the power LED on the operation panel is OFF.
If the copy lamp unit is manually moved with the main power ON, the trouble code "F6-30" may occur.
If the trouble code "F6-30" is not canceled by turning OFF/ON the main power, refer to the Service Manual (FAX self diagnostics and the trouble codes).

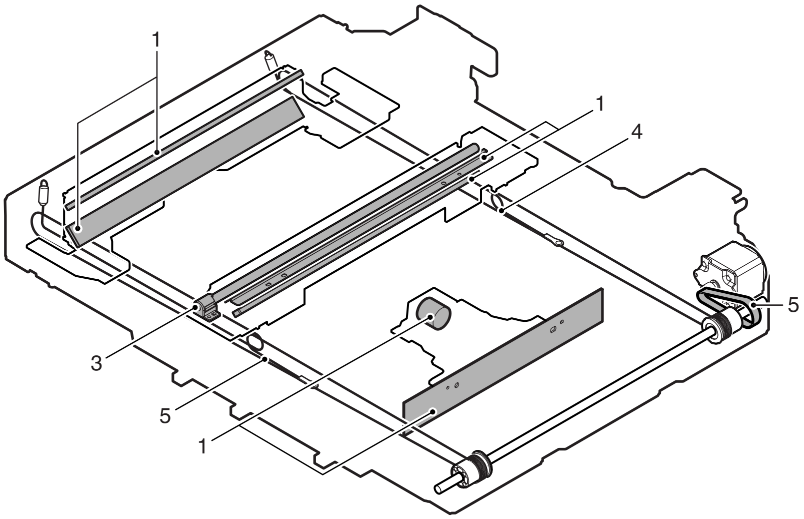
4. Maintenance

A. Optical Section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shif the position.

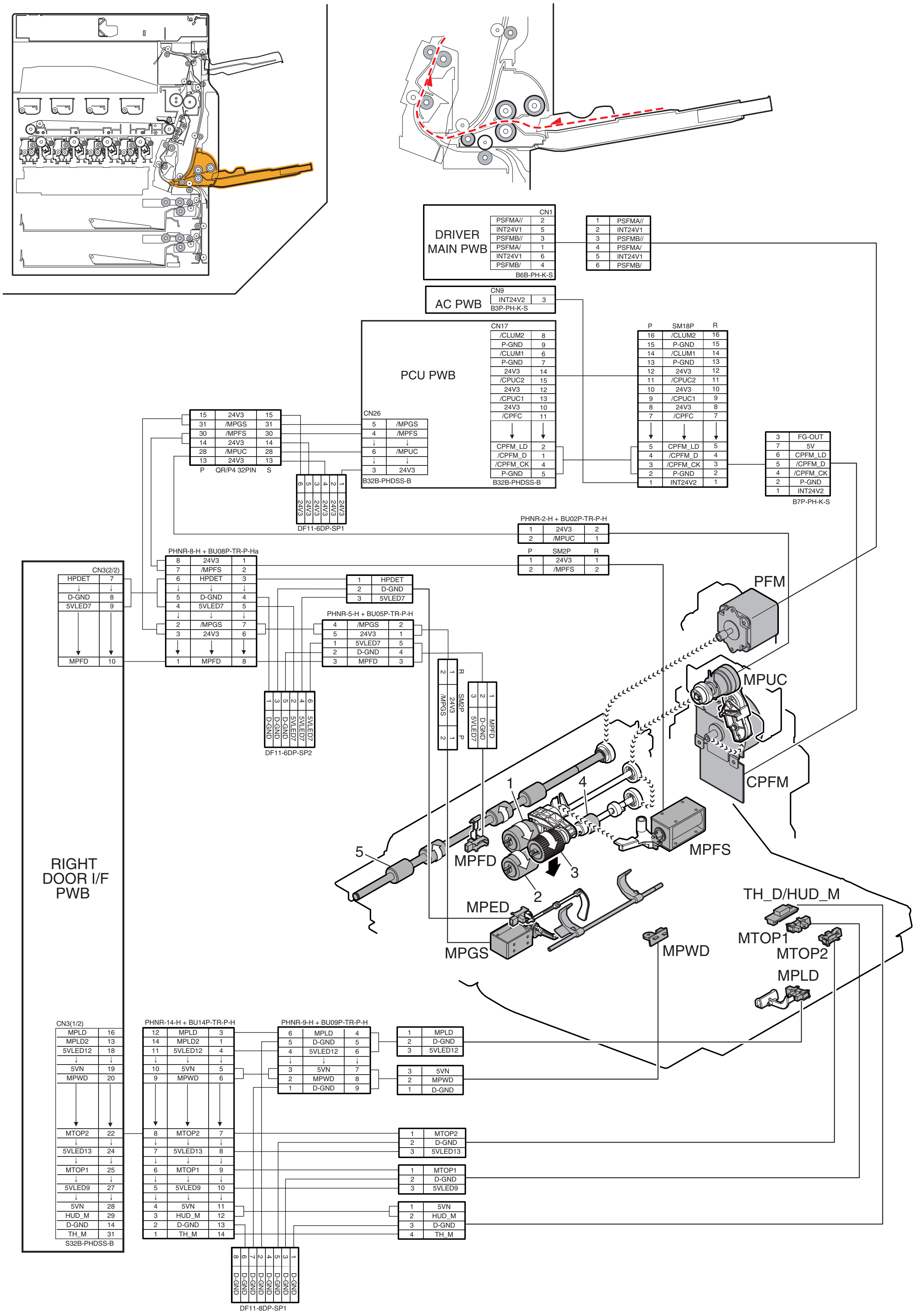
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Mirror/lens/ reflector/CCD	Mechanism parts	○	○	○	○	○	○	○	○	○	○	○	○	○	
2	Table glass/SPF glass		○	○	○	○	○	○	○	○	○	○	○	○	○	
3	Scanner lamp		○	○	○	○	○	○	○	○	○	○	○	○	○	
4	Rails		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Specified position
5	Drive belt/drive wire		×	×	×	×	×	×	×	×	×	×	×	×	×	





[D] MANUAL PAPER FEED SECTION

1. Electrical and mechanism relation diagram



DRIVER MAIN PWB
CN1
PSFMA// 2
INT24V1 5
PSFMB// 3
PSFMA/ 1
INT24V1 6
PSFMB/ 4
B6B-PH-K-S
1 PSFMA//
2 INT24V1
3 PSFMB//
4 PSFMA/
5 INT24V1
6 PSFMB/
AC PWB
CN9
INT24V2 3
B3P-PH-K-S
PCU PWB
CN17
/CLUM2 8
P-GND 9
/CLUM1 6
P-GND 7
24V3 14
/CPUC2 15
24V3 12
/CPUC1 13
24V3 10
/CPFC 11
CPFM_LD 2
/CPFM_D 1
/CPFM_CK 4
P-GND 5
B32B-PHDSS-B
CN26
5 /MPGS
4 /MPFS
6 /MPUC
3 24V3
B32B-PHDSS-B
P SM18P R
16 /CLUM2 16
15 P-GND 15
14 /CLUM1 14
13 P-GND 13
12 24V3 12
11 /CPUC2 11
10 24V3 10
9 /CPUC1 9
8 24V3 8
7 /CPFC 7
5 CPFM_LD 5
4 /CPFM_D 4
3 /CPFM_CK 3
2 P-GND 2
1 INT24V2 1
3 FG-OUT
7 5V
6 CPFM_LD
5 /CPFM_D
4 /CPFM_CK
2 P-GND
1 INT24V2
B7P-PH-K-S
15 24V3 15
31 /MPGS 31
30 /MPFS 30
14 24V3 14
28 /MPUC 28
13 24V3 13
P QR/P4 32PIN S
1 24V3
2 24V3
4 24V3
3 24V3
5 24V3
6 24V3
DF11-6DP-SP1
PHNR-2-H + BU02P-TR-P-H
1 24V3 2
2 /MPUC 1
P SM2P R
1 24V3 1
2 /MPFS 2
PHNR-8-H + BU08P-TR-P-Ha
8 24V3 1
7 /MPFS 2
6 HPDET 3
5 D-GND 4
4 5VLED7 5
2 /MPGS 7
3 24V3 6
1 MPFD 8
CN3(2/2)
HPDET 7
D-GND 8
5VLED7 9
MPFD 10
1 HPDET
2 D-GND
3 5VLED7
PHNR-5-H + BU05P-TR-P-H
4 /MPGS 2
5 24V3 1
1 5VLED7 5
2 D-GND 4
3 MPFD 3
6 5VLED7
4 5VLED7
2 5VLED7
5 D-GND
3 D-GND
1 D-GND
DF11-6DP-SP2
R SM2P P
1 24V3 2
2 /MPGS 1
1 MPFD
2 D-GND
3 5VLED7
PFM
MPUC
CPFM
1
4
5
MPFD
3
2
MPFS
MPED
MPGS
MPWD
TH_D/HUD_M
MTOP1
MTOP2
MPLD
RIGHT DOOR I/F PWB
CN3(1/2)
MPLD 16
MPLD2 13
5VLED12 18
5VN 19
MPWD 20
MTOP2 22
5VLED13 24
MTOP1 25
5VLED9 27
5VN 28
HUD_M 29
D-GND 14
TH_M 31
S32B-PHDSS-B
PHNR-14-H + BU14P-TR-P-H
12 MPLD 3
14 MPLD2 1
11 5VLED12 4
10 5VN 5
9 MPWD 6
8 MTOP2 7
7 5VLED13 8
6 MTOP1 9
5 5VLED9 10
4 5VN 11
3 HUD_M 12
2 D-GND 13
1 TH_M 14
PHNR-9-H + BU09P-TR-P-H
6 MPLD 4
5 D-GND 5
4 5VLED12 6
3 5VN 7
2 MPWD 8
1 D-GND 9
1 MPLD
2 D-GND
3 5VLED12
3 5VN
2 MPWD
1 D-GND
1 MTOP2
2 D-GND
3 5VLED13
1 MTOP1
2 D-GND
3 5VLED9
1 5VN
2 HUD_M
3 D-GND
4 TH_M
1 D-GND
3 D-GND
5 D-GND
4 D-GND
2 D-GND
7 D-GND
6 D-GND
8 D-GND
DF11-8DP-SP1

Signal name	Name	Function/Operation
CPFM	Paper feed motor	Paper feed section drive
MPED	Manual feed paper empty detection	Manual paper feed tray paper empty detection
MPFD	Manual feed paper entry detection	Manual paper feed tray paper empty detection
MPDS	Paper pickup solenoid	Paper pickup solenoid (Manual paper feed)
MPGS	Manual paper feed gate solenoid	Controls the manual paper feed gate solenoid Open/Close.
MPLD	Manual feed paper length detector	Manual paper feed tray paper length detection
MPUC	Manual paper feed clutch	Controls the manual paper feed section paper feed roller ON/OFF.
MPWD	Manual paper feed tray paper width detector	Manual paper feed tray paper width detection
MTOP1	Manual paper feed tray pull-out position detector 1	Manual paper feed tray paper pull-out position detection (storage position)
MTOP2	Manual paper feed tray pull-out position detector 2	Manual paper feed tray paper pull-out position detection (pulling-out position)
PFM	Transport motor	Transport drive between the resist roller and the paper feed section. Transport drive between the resist roller and the right door section.
TH_M/HUD_M	Temperature/humidity detection	Detects temperature/humidity.

No.	Name	Function/Operation
1	Paper feed roller (Manual paper feed tray)	Feeds paper to the paper transport section.
2	Separation roller (Manual paper feed tray)	Separates paper to prevent Double Feed.
3	Paper pickup roller (Manual paper feed tray)	Feeds paper to the paper feed roller.
4	Torque limiter	A certain level of resistance force is supplied to the rotation of the separation roller to prevent double feed.
5	Transport roller 12 (Drive)	Transports paper transported from the transport roller 11 to the transport roller 8. Transports paper fed from the manual feed tray to the transport roller 8.

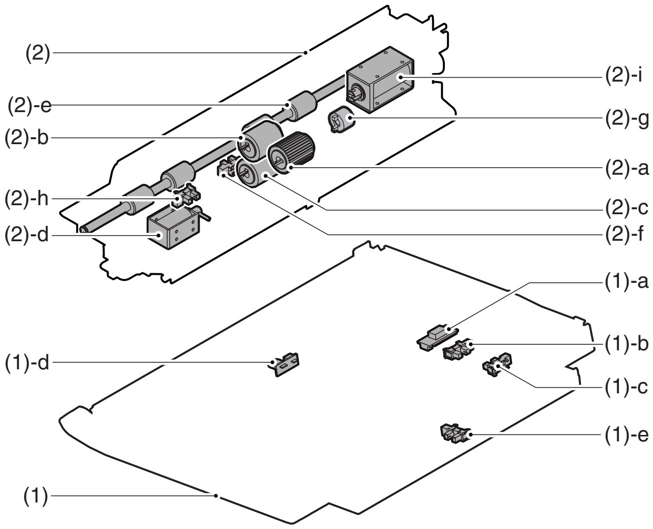
2. Operational descriptions

The paper pickup roller moves up and down to press paper and separates the top paper, which is fed to the paper feed roller.

The paper feed roller feeds paper to the paper transport section, and the separation roller prevents double feed.. ON/OFF control of the pickup roller and the paper feed roller is made by the manual paper feed clutch. Paper is transported to the resist roller by the manual paper transport roller.

3. Disassembly and assembly

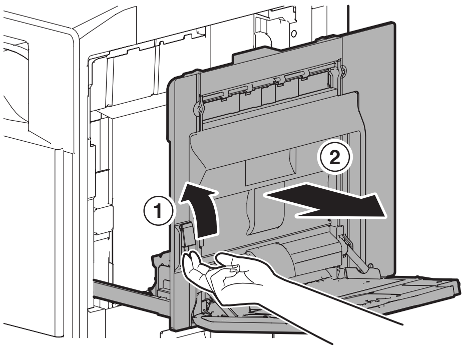
A. Manual paper feed section



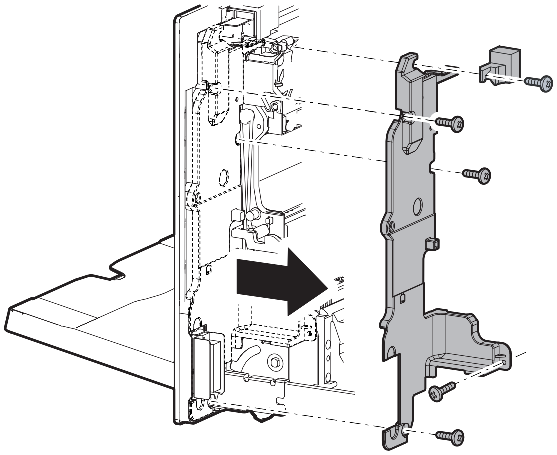
Unit		Parts		Maintenance
(1)	Manual paper feed tray unit	a	Temperature/humidity sensors	
		b	Manual paper feed tray pull-out position detector 1	
		c	Manual paper feed tray pull-out position detector 2	
		d	Manual paper feed tray paper width detector	
		e	Manual feed paper length detector	
(2)	Manual paper feed unit	a	Paper pickup roller	×○
		b	Paper feed roller	×○
		c	Separation roller	×○
		d	Manual paper feed gate solenoid	
		e	Transport roller 12 (Drive)	
		f	Manual feed paper entry detection	
		g	Torque limiter	×
		h	Manual feed paper empty detection	
		i	Paper pickup solenoid	

(1) Manual paper feed tray unit

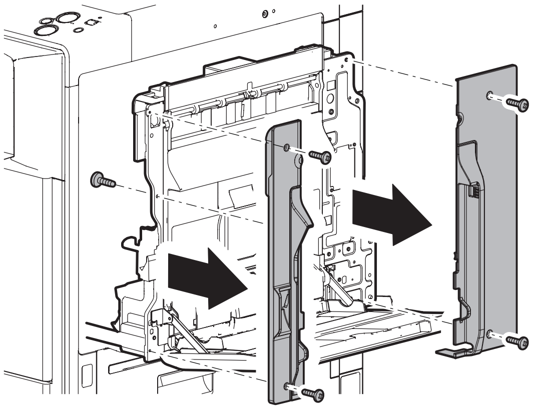
1) Open the right door unit.



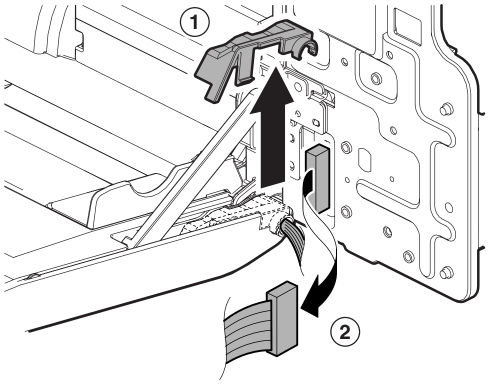
2) Remove the screws, and remove the connector cover. Remove the screws, then remove the ADU inner cover.



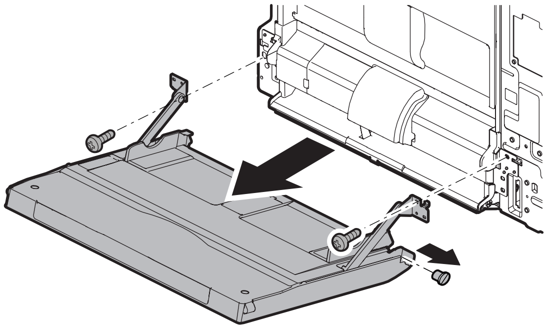
3) Remove the ADU cabinet F and the ADU cabinet R.



4) Remove the MF harness cover and disconnect the connector.



5) Remove the MF tray installing shaft, and remove the manual paper feed tray unit.



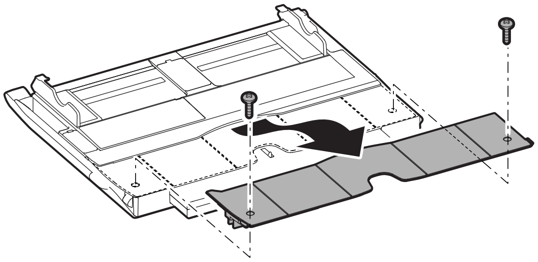
a. Temperature/humidity sensors

b. Manual paper feed tray pull-out position detector 1

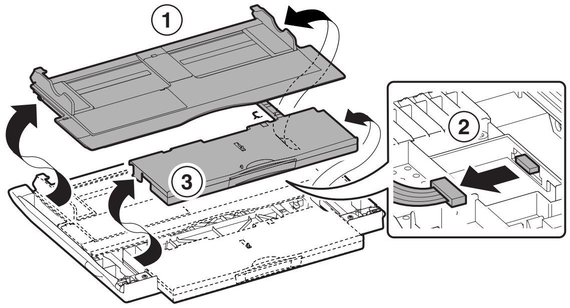
c. Manual paper feed tray pull-out position detector 2

d. Manual paper feed tray paper width detector

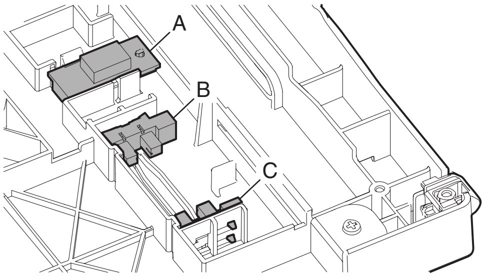
1) Remove the manual paper feed tray unit.
2) Remove the MF tray upper inside cover.



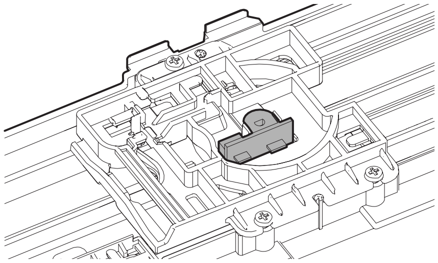
3) Disengage the pawl. Lift the MF tray upper and the MF tray 2, and disconnect the connector.



4) Temperature/humidity sensor (A), manual paper feed tray pull-out position detector 1 (B), manual paper feed tray pull-out position detector 2 (C)

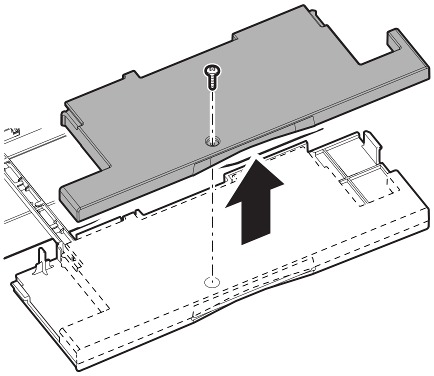


5) Manual paper feed tray paper width detector

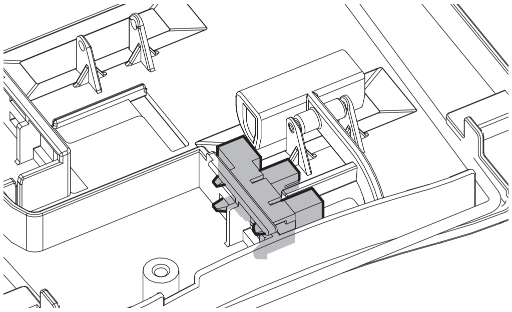


e. Manual feed paper length detector

1) Remove the manual paper feed tray unit.
2) Remove the MF tray 2.
3) Remove the MF tray 2 lower.

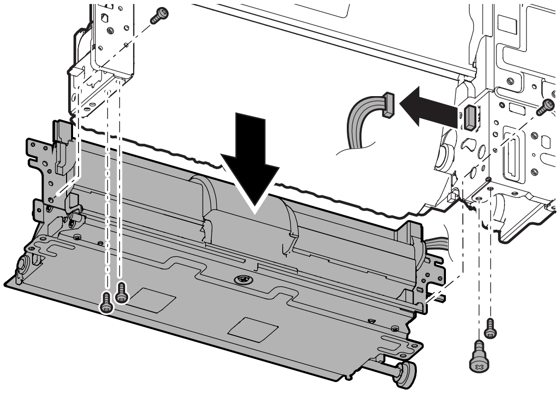


4) Manual feed paper length detector



(2) Manual paper feed unit

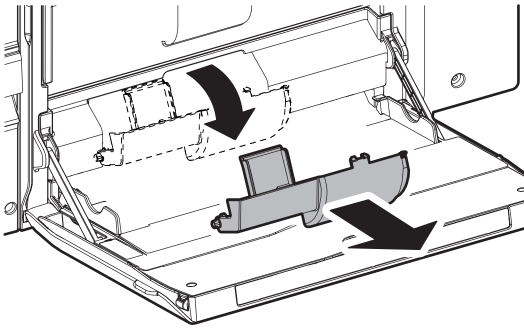
1) Open the right door unit.
2) Remove the manual paper feed tray unit.
3) Disconnect the connector, and remove the manual paper feed unit.



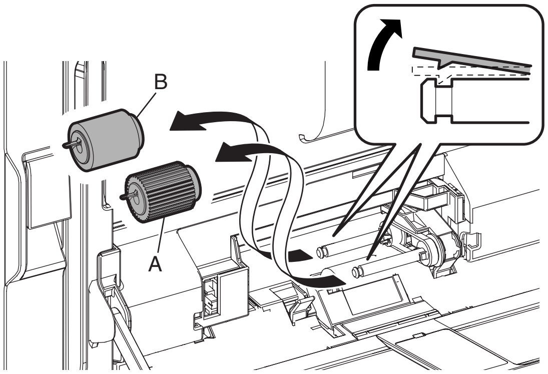
a. Paper pickup roller

b. Paper feed roller

1) Remove the MF pickup cover.

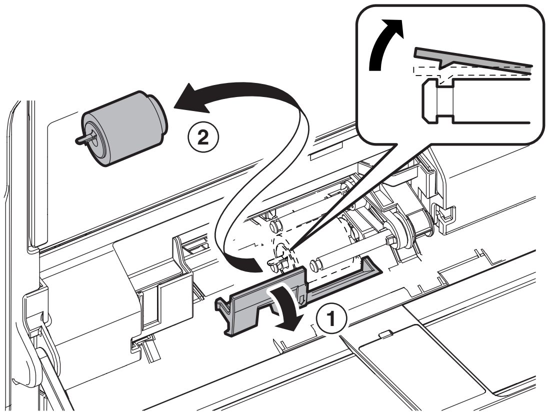


2) Remove the paper pickup roller (A) and the paper feed roller (B).



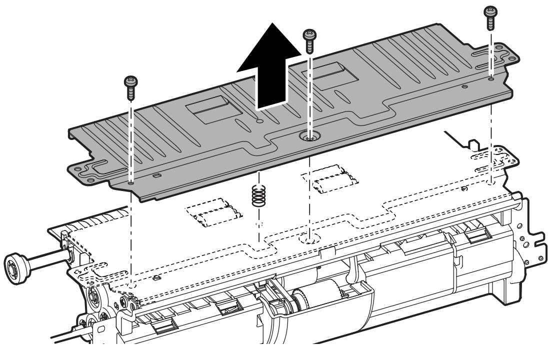
c. Separation roller

1) Remove the MF pickup cover.
2) Remove the paper pickup roller and the paper feed roller.
3) Open the MF lower maintenance cover, remove the separation roller.

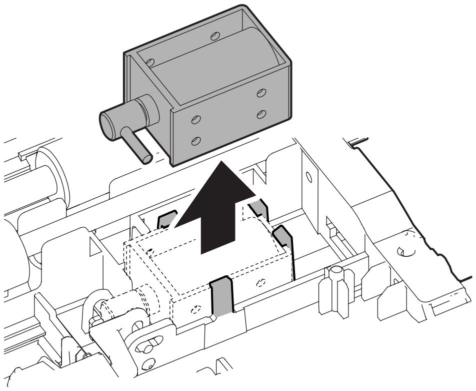


d. Manual paper feed gate solenoid

1) Remove the manual paper feed unit.
2) Remove the MF base guide supporting plate and the spring.

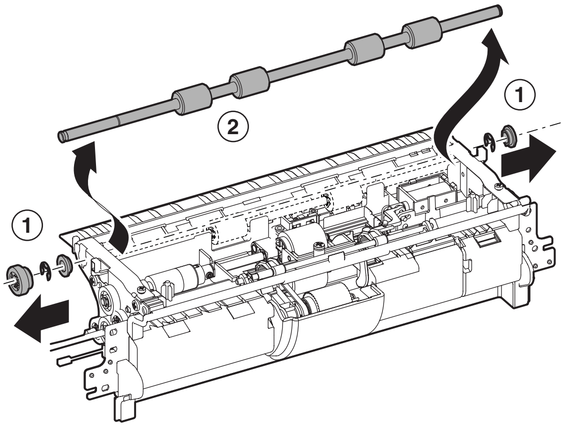


3) Disconnect the connector, and disengage the pawl. Remove the manual paper feed gate solenoid.



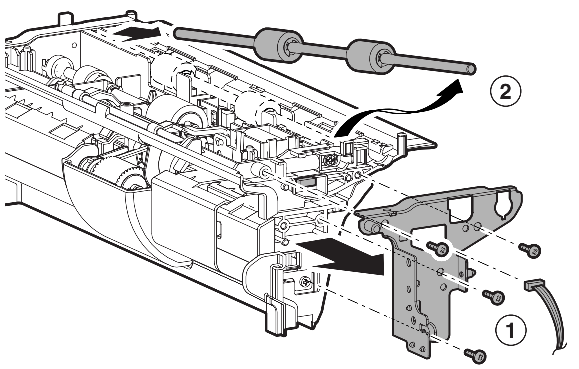
e. Transport roller 12 (Drive)

1) Remove the manual paper feed unit.
2) Remove the MF base guide supporting plate and the spring.
3) Remove the parts, and remove the transport roller 12 (Drive).

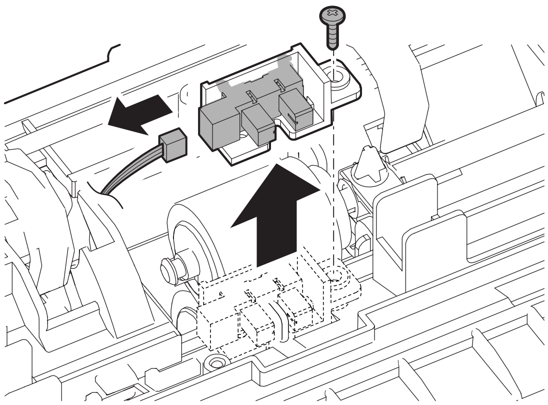


f. Manual feed paper entry detection

1) Remove the manual paper feed unit.
2) Remove the MF base guide supporting plate and the spring.
3) Remove the transport roller 12 (Drive).
4) Disconnect the connector, and remove the MF front plate. Remove the transport roller 7 (Idle) unit.

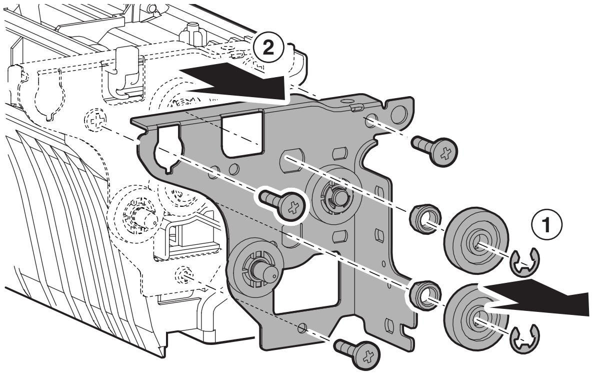


5) Disconnect the connector, and remove the sensor mounting plate.

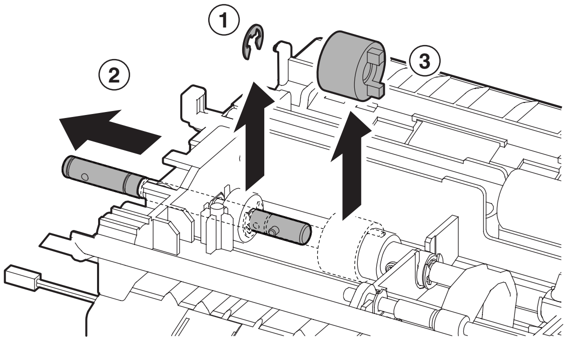


g. Torque limiter

1) Remove the manual paper feed unit.
2) Remove the MF base guide supporting plate and the spring.
3) Remove the transport roller 12 (Drive).
4) Remove the parts, and remove the MF drive plate.

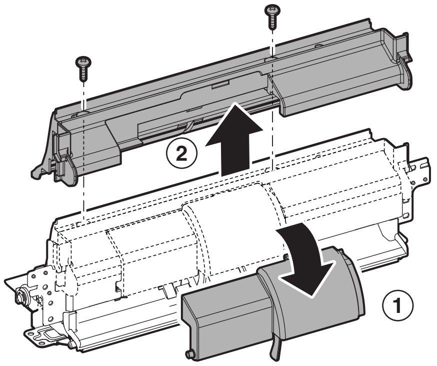


5) Remove the E-ring. Remove the shaft and remove the torque limiter.

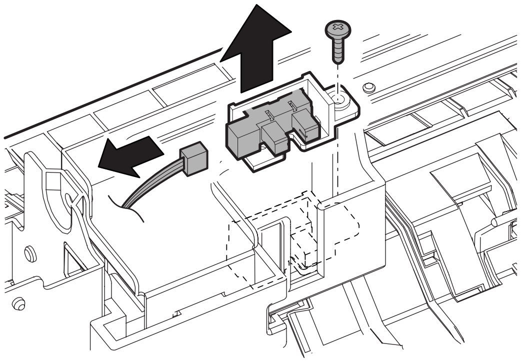


h. Manual feed paper empty detection

1) Remove the manual paper feed unit.
2) Remove the MF pickup cover and the MFADU paper guide.

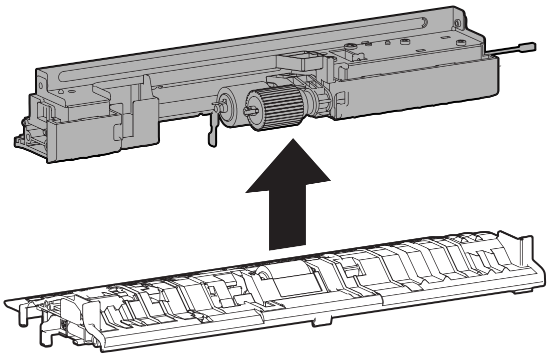


3) Disconnect the connector, and remove the sensor mounting plate.

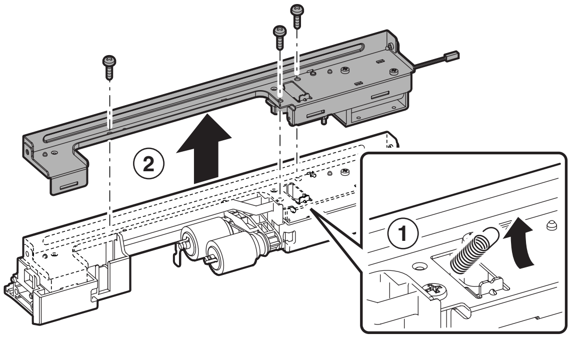


i. Paper pickup solenoid

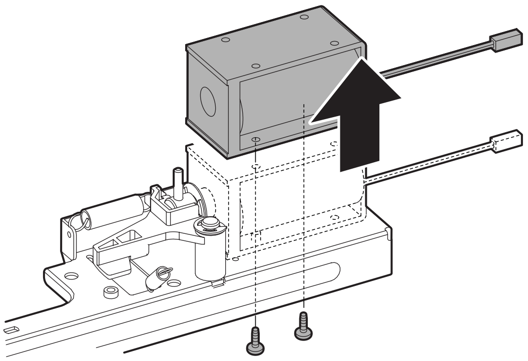
1) Remove the manual paper feed unit.
2) Remove the MF base guide supporting plate and the spring.
3) Remove the transport roller 12 (Drive).
4) Remove the MF drive plate.
5) Remove the MF front plate.
6) Remove the MF upper base paper guide unit.



7) Remove the MF upper guide supporting plate.



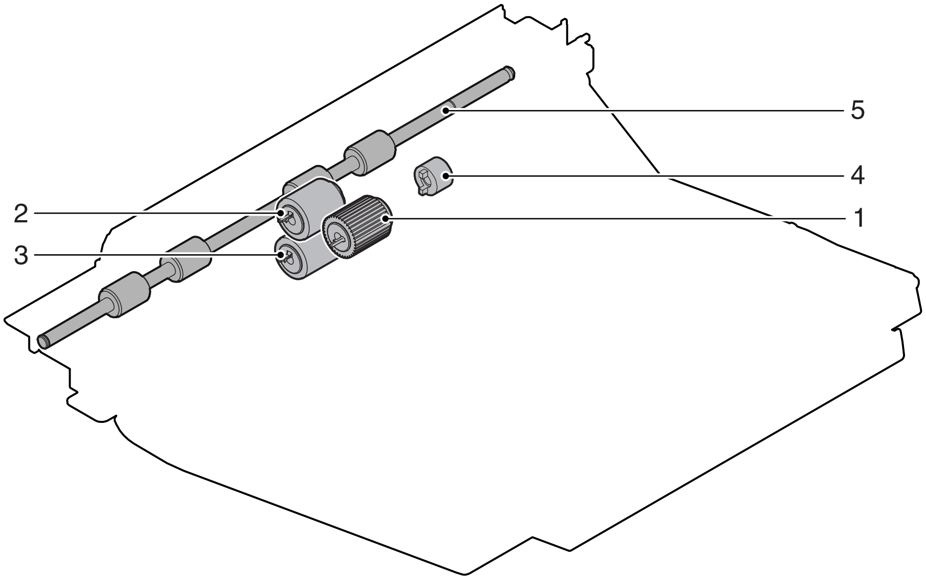
8) Remove the paper pickup solenoid.



4. Maintenance

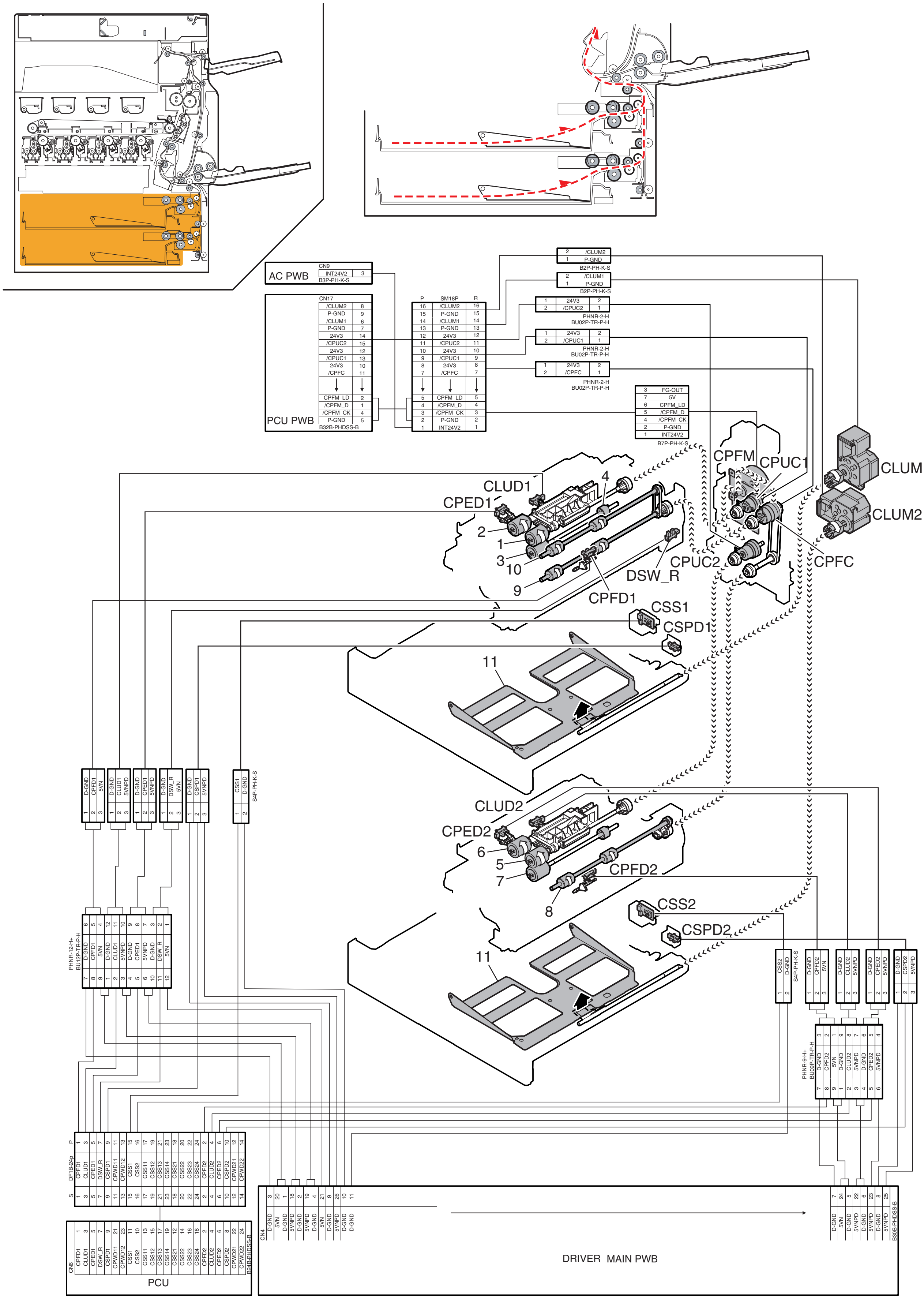
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark: Refer to the Parts Guide. Block/ Item No. (Only the replacement parts are described.)
1	Pickup roller	Mechanism parts	○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [16]-33)
2	Paper feed roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [16]-29)
3	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [15]-37)
4	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	×	
5	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	○	



[E] TRAY PAPER FEED SECTION

1. Electrical and mechanism relation diagram


AC PWB
PCU PWB
CN9
INT24V2
B3P-PH-K-S
CN17
SM18P
B32B-PHDSS-B
B2P-PH-K-S
PHNR-2-H
BU02P-TR-P-H
B7P-PH-K-S
FG-OUT
5V
CPFM_LD
/CPFM_D
/CPFM_CK
P-GND
/CLUM2
/CLUM1
24V3
/CPUC2
/CPUC1
/CPFC
CPFM
CPUC1
CLUM1
CLUM2
CLUD1
CPED1
4
2
1
3
10
9
DSW_R
CPUC2
CPFC
CPFD1
CSS1
CSPD1
11
CLUD2
CPED2
6
5
7
CPFD2
8
CSS2
CSPD2
11
PHNR-12-H+BU12P-TR-P-H
PHNR-9-H+BU09P-TR-P-H
S4P-PH-K-S
DF1B-24P
CN6
PCU
CN4
B30B-PHDSS-B
DRIVER MAIN PWB

Signal name	Name	Function/Operation
CLUD1	Tray 1 upper limit detection (Lift HP detection)	Tray 1 upper limit detection
CLUD2	Tray 2 upper limit detection (Lift HP detection)	Tray 2 upper limit detection
CLUM1	Paper tray lift-up motor (Paper feed tray 1)	Drives the paper tray lift plate.
CLUM2	Paper tray lift-up motor (Paper feed tray 2)	Drives the paper tray lift plate.
CPED 1	Tray 1 paper empty detection	Tray 1 paper empty detection
CPED 2	Tray 2 paper empty detection	Tray 2 paper empty detection
CPFC	Tray vertical transport clutch	
CPFD1	Tray 1 transport detection (Paper entry detection)	Tray 1 paper pass detection
CPFD2	Tray 2 transport detection (Paper entry detection)	Tray2 paper pass detection
CPFM	Paper feed motor	Paper feed section drive
CPUC1	Paper feed clutch (Paper feed tray 1)	Controls the paper feed tray section roller ON/OFF.
CPUC2	Paper feed clutch (Paper feed tray 2)	Controls the paper feed tray section roller ON/OFF.
CSPD1	Tray 1 paper remaining quantity detection	Tray 1 paper remaining quantity detection
CSPD2	Tray 2 paper remaining quantity detection	Tray 2 paper remaining quantity detection
CSS1	Tray 1 presence detection	Detects the presence of the tray 1
CSS2	Tray 2 presence detection	Detects the presence of the tray 2
DSW_C	Tray 1, 2 transfer cover open/close detection	Detects opening of the tray 1, 2 transport cover.

No.	Name	Function/Operation
1	Paper feed roller (No.1 paper feed tray)	Feeds paper to the paper transport section.
2	Paper pickup roller (No. 1 paper feed tray)	Feeds paper to the paper feed roller.
3	Separation roller (No. 1 paper feed tray)	Separates paper to prevent Double Feed.
4	Torque limiter	A certain level of resistance force is supplied to the rotation of the separation roller to prevent double feed.
5	Paper feed roller (No. 1 paper feed tray)	Feeds paper to the paper transport section.
6	Paper pickup roller (No. 2 paper feed tray)	Feeds paper to the paper feed roller.
7	Separation roller (No. 2 paper feed tray)	Separates paper to prevent Double Feed.
8	Transport roller 4 (Drive)	Transports the paper transported from the transport roller 1 and paper feed roller (No. 2 paper feed tray) to the transport roller 7.
9	Transport roller 5 (Drive)	Transports the paper fed from the paper tray 1 to the transport roller 7.
10	Transport roller 7 (Drive)	Transports the paper fed from the paper feed tray 1, 2 or 3, 4 to the transport roller 8.
11	Rotation plate	Lifts up the paper to keep the paper feed position.

2. Operational descriptions

A. Preliminary operation before paper feed

- When the paper is set and the paper feed tray is inserted, the pickup roller moves down and the paper feed tray sensor turns ON.
- The lift-up motor operates to lift the rotating plate.
- The paper upper limit sensor turns on to stop the rotating plate at the specified position.

B. Paper feed operation

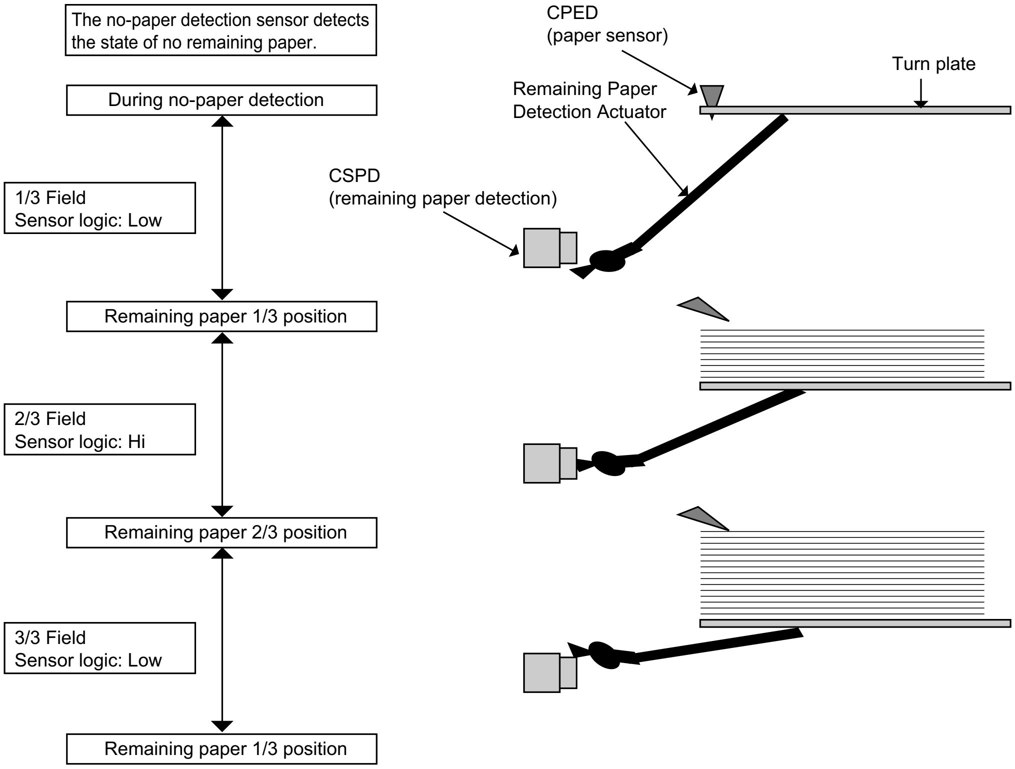
- When copy/print operation is started, the motor and the clutch are turned ON and the pickup roller is rotated in the paper pickup timing to feed paper.
- At the same time, the paper feed roller rotates to feed paper to the transport section. At that time, the separation roller rotates to prevent against double feed of paper.

C. Remaining paper detection

- Remaining paper detection is performed according to four stages, i.e. three stages with paper and one stage with no paper, and the result is displayed.

D. Remaining paper detection method

- The number of remaining sheets is determined according to the number of times the remaining paper sensor changes from the time the paper feed tray starts lifting up to the time when the upper detection sensor comes ON.

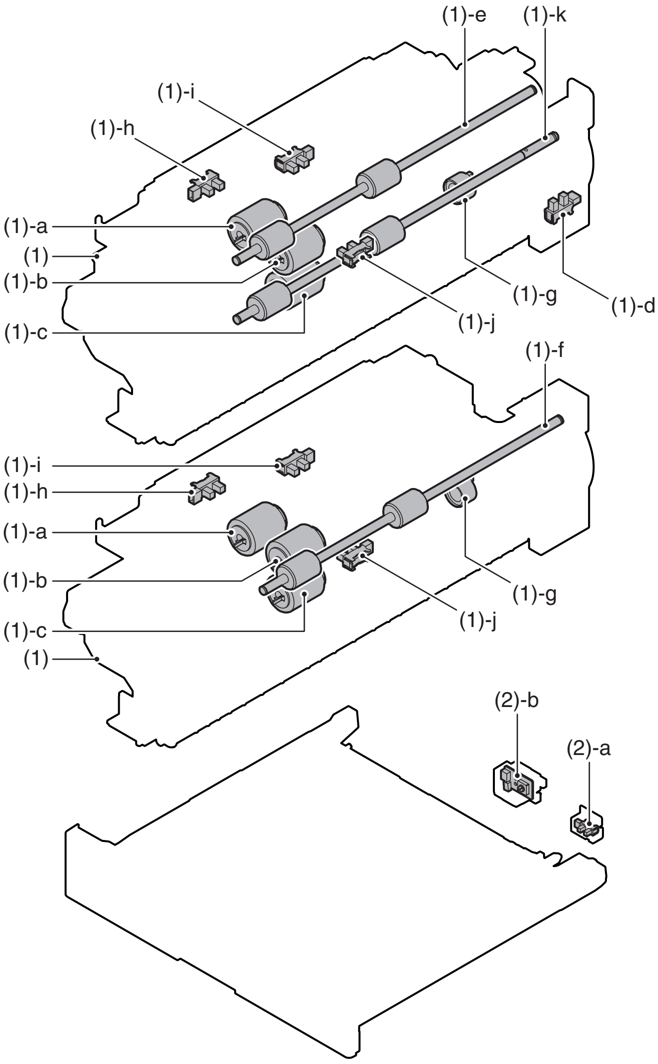


(Figure showing state transition of the remaining paper detection sensor during tray elevation and changes in status according to the number of remaining sheets)

The no-paper detection sensor detects the state of no remaining paper.
During no-paper detection
1/3 Field
Sensor logic: Low
Remaining paper 1/3 position
2/3 Field
Sensor logic: Hi
Remaining paper 2/3 position
3/3 Field
Sensor logic: Low
Remaining paper 1/3 position
CPED
(paper sensor)
Turn plate
Remaining Paper
Detection Actuator
CSPD
(remaining paper detection)

3. Disassembly and assembly

A. Tray paper feed section

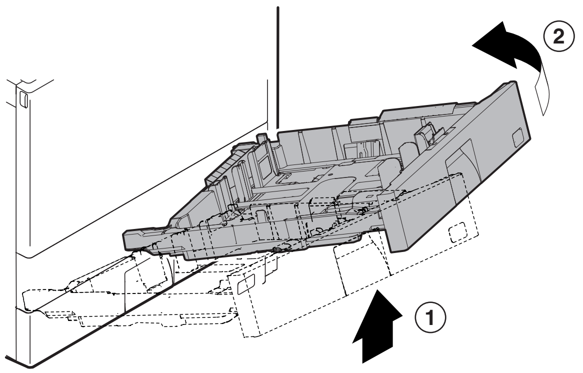


Unit		Parts		Maintenance
(1)	Tray paper feed unit 1, 2	a	Paper pickup roller	×○
		b	Paper feed roller	×○
		c	Separation roller	×○
		d	Tray 1 transport cover detection	
		e	Transport roller 7 (Drive)	×○
		f	Transport roller 4 (Drive)	×○
		g	Torque limiter	×
		h	Tray 1, 2 paper presence detection	
		i	Tray 1, 2 upper limit detection	
		j	Tray 1, 2 transport detection	
		k	Transport roller 5 (Drive)	×○
(2)	Others	a	Tray 1, 2 paper remaining quantity detection	
		b	Tray 1, 2 presence detection	

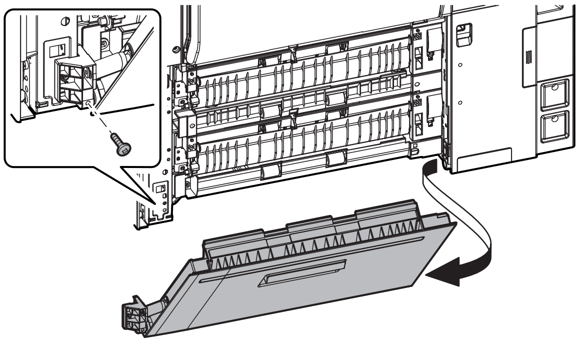
(1) Remove the tray paper feed unit 1 and 2.

1) Remove the right cabinet front.

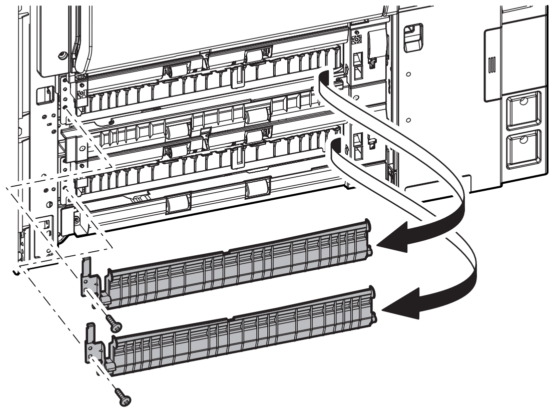
2) Remove the tray 1 and 2.



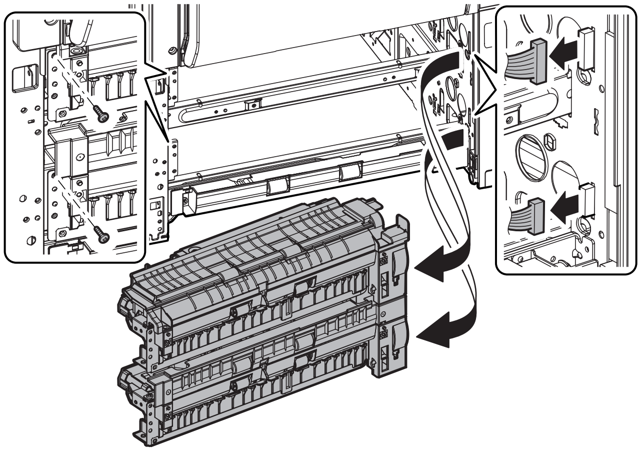
3) Remove the right lower door unit.



4) Remove the paper feed movable PG lower.



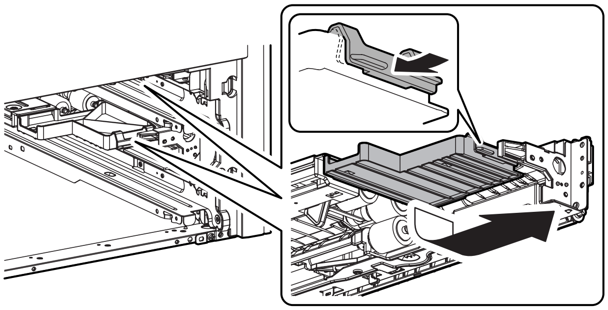
5) Remove the paper feed unit 1, 2.



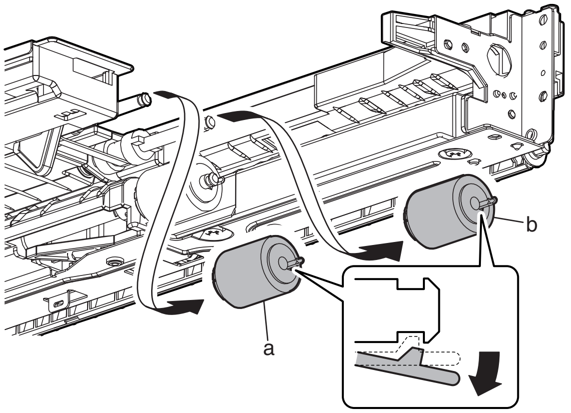
a. Paper pickup roller

b. Paper feed roller

1) Remove the tray 1 and 2.
2) Remove the paper guide.

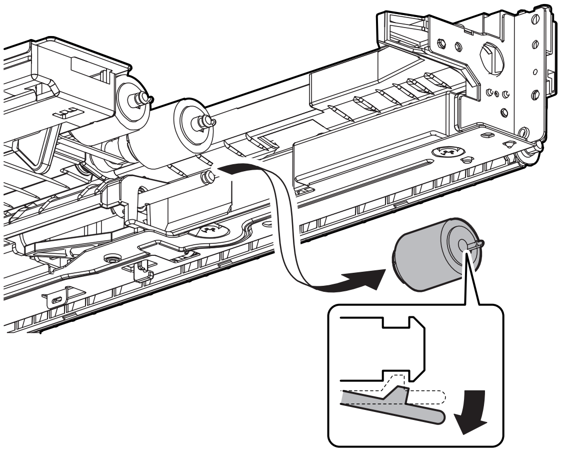


3) Remove the paper pickup roller (a) and the paper feed roller (b).



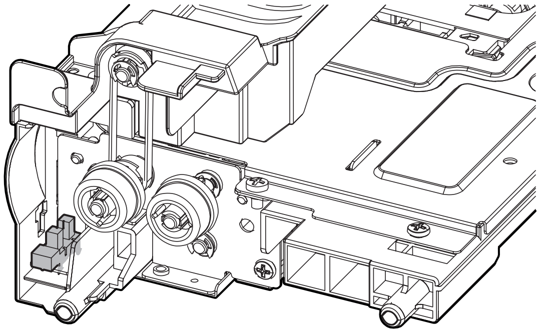
c. Separation roller

1) Remove the tray 1 and 2.
2) Remove the paper guide.
3) Remove the separation roller.



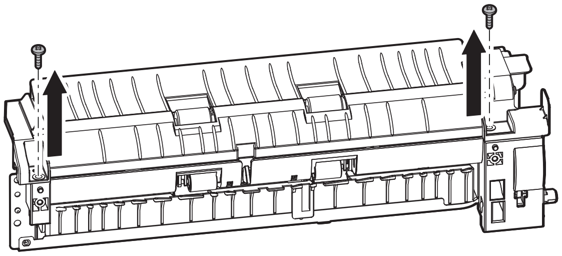
d. Tray 1 transport cover opening detection

1) Remove the tray paper feed unit 1.

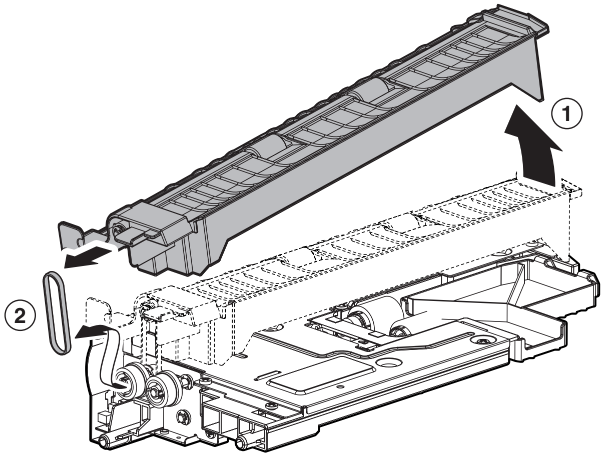


e. Transport roller 7 (Drive)

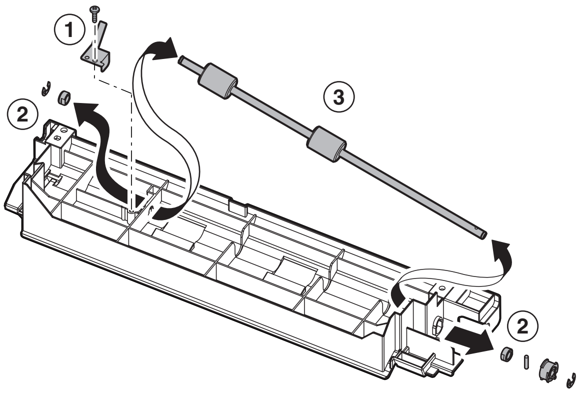
1) Remove the tray paper feed unit 1.
2) Remove the screws.



3) Remove the paper feed reverse PG unit, and remove the belt.

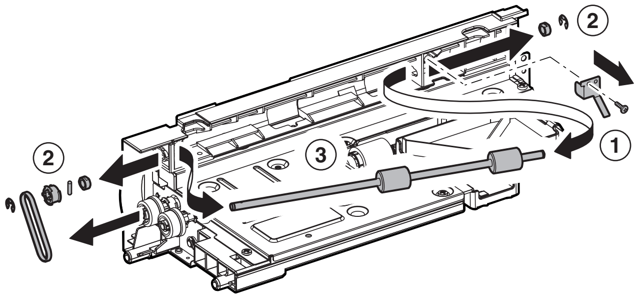


4) Remove the grounding plate. Remove the parts. Remove the transport roller 7 (drive).



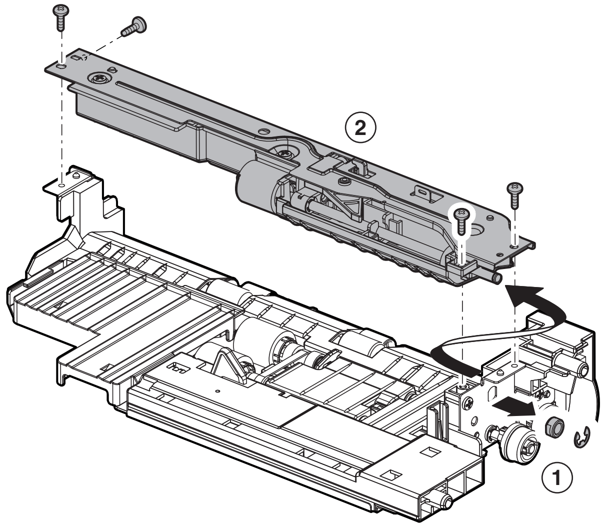
f. Transport roller 4 (Drive)

1) Remove the tray paper feed unit 2.
2) Remove the grounding plate. Remove the parts. Remove the transport roller 4 (drive).

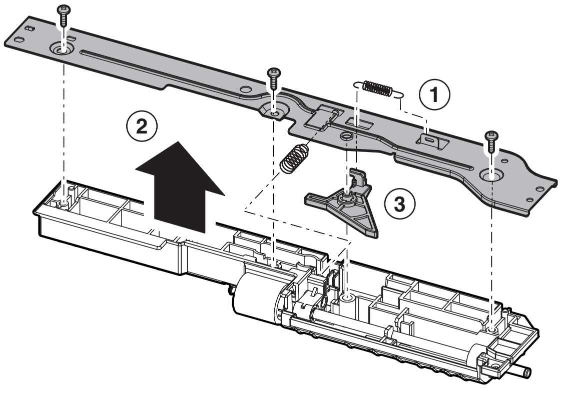


g. Torque limiter

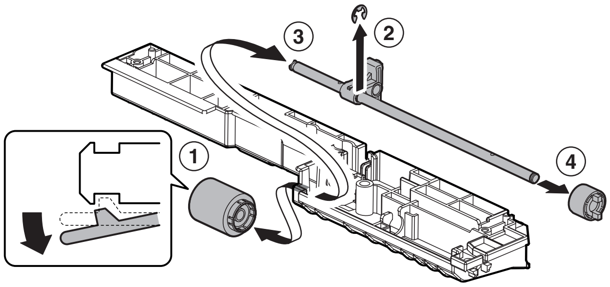
1) Remove the paper feed unit 1, 2.
2) Remove the E-ring and the bearing, and remove the paper feed lower PG unit.



3) Remove the pressure release spring, and remove the paper feed lower PG supporting plate. Remove the separation pressure spring, and the separation pressure release plate.



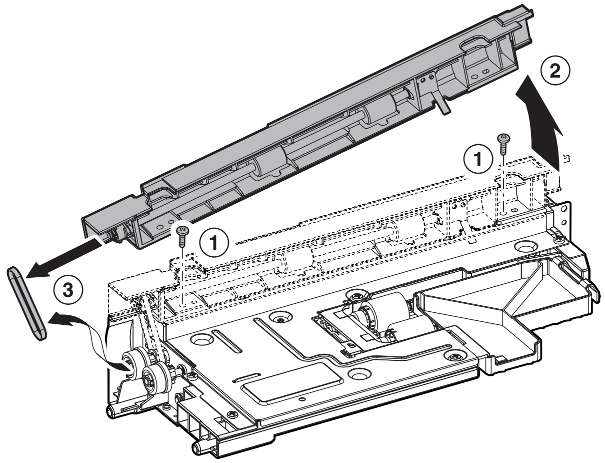
4) Remove the separation roller. Remove the E-ring and the separation shift. Remove the torque limiter.



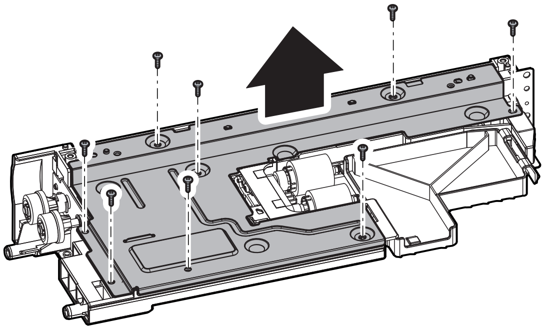
h. Tray 1, 2 paper presence detection

i. Tray 1, 2 upper limit detection sensor

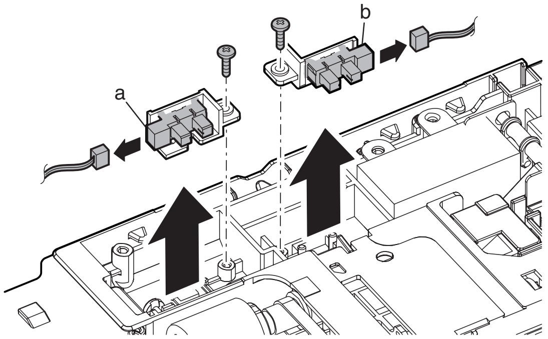
1) Remove the paper feed unit 1, 2.
2) Remove the paper feed reverse PG unit. (Tray paper feed unit 1 only)
3) Remove the paper feed vertical transport PG unit, then remove the belt. (Tray paper feed unit 2 only)



4) Remove the paper feed upper PG supporting plate.

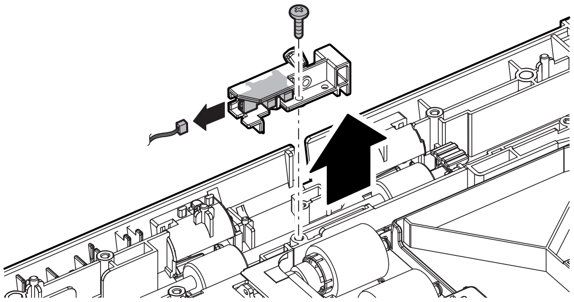


5) Remove the tray 1, 2 paper presence detector (a) and the tray 1, 2 upper limit detector (b).



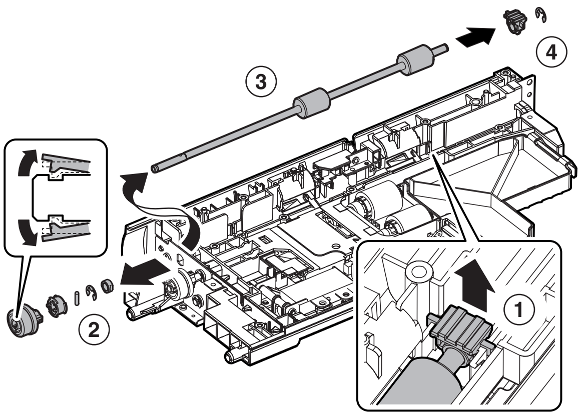
j. Tray 1, 2 transport detection

1) Remove the paper feed unit 1, 2.
2) Remove the paper feed reverse PG unit. (Tray paper feed unit 1 only)
3) Remove the paper feed vertical transport PG unit. (Tray paper feed unit 2 only)
4) Remove the paper feed upper PG supporting plate.
5) Remove the tray 1, 2 transport detector.



k. Transport roller 5 (Drive)

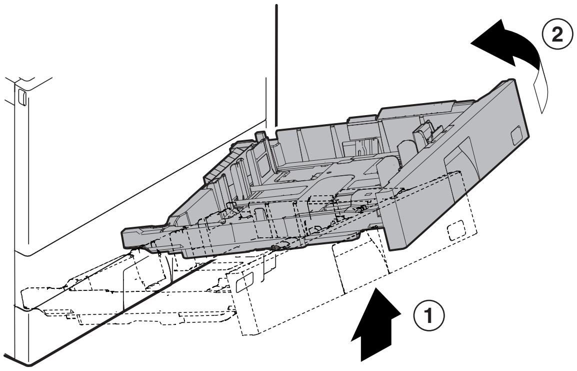
1) Remove the tray paper feed unit 1.
2) Remove the paper feed reverse PG unit.
3) Remove the paper feed upper PG supporting plate.
4) Remove the parts, and remove the transport roller 5 (Drive). Remove the E-ring and the bearing holder from the transport roller 5 (Drive).



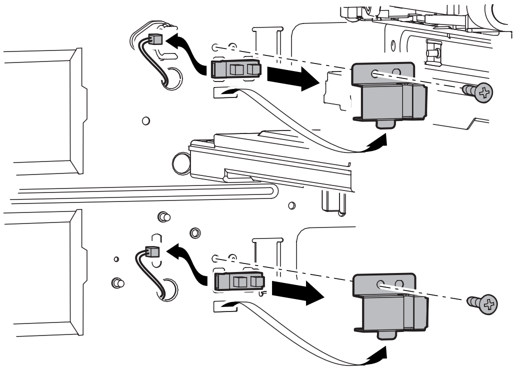
(2) Others

a. Tray 1, 2 paper remaining quantity detection

1) Remove the tray 1 and 2.

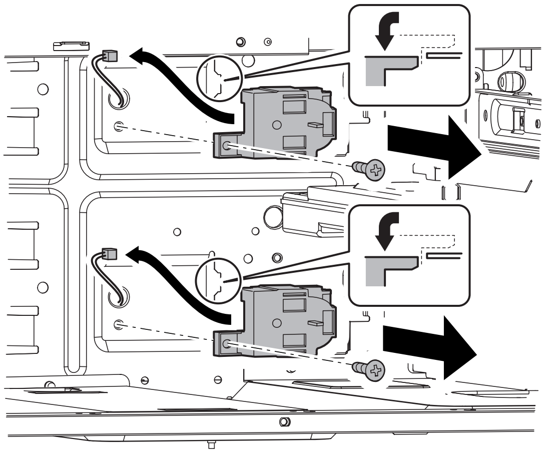


2) Remove the connector and the screws, then remove the tray 1, 2 paper remaining quantity detector.

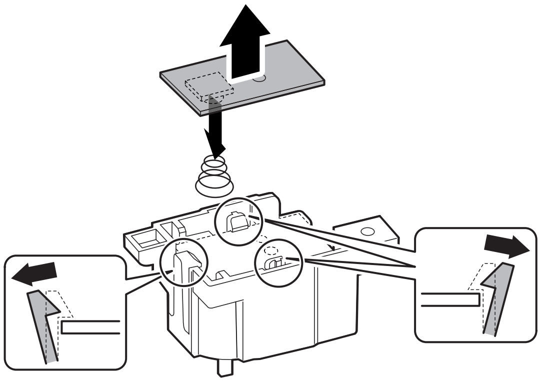


b. Tray 1, 2 presence detection

1) Remove the tray 1 and 2.
2) Remove the connector and the screws, then remove the tray 1, 2 presence detector.



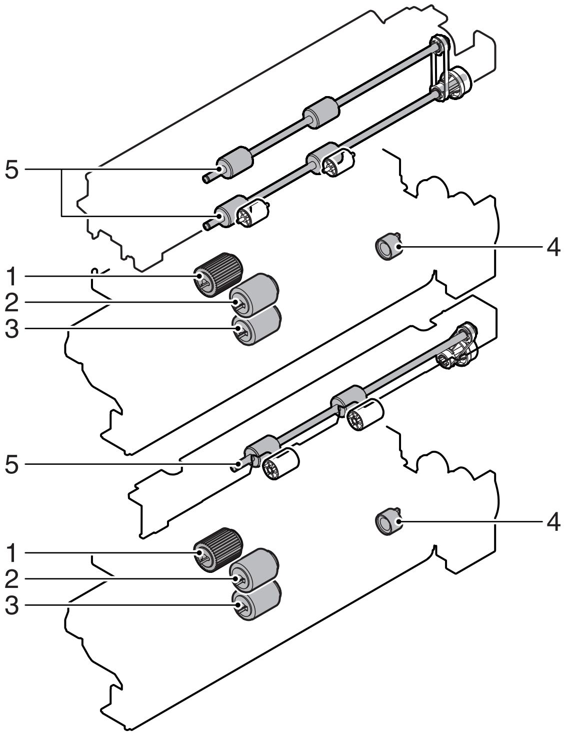
3) Release the pawl, and remove the tray 1, 2 detection unit. Remove the spring from the tray 1, 2 presence detector.



4. Maintenance

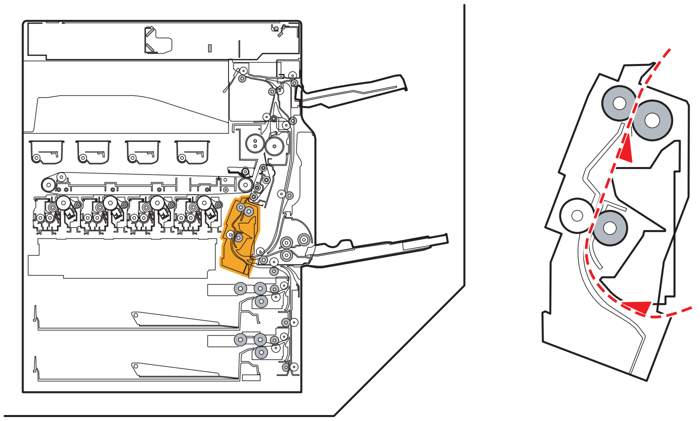
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

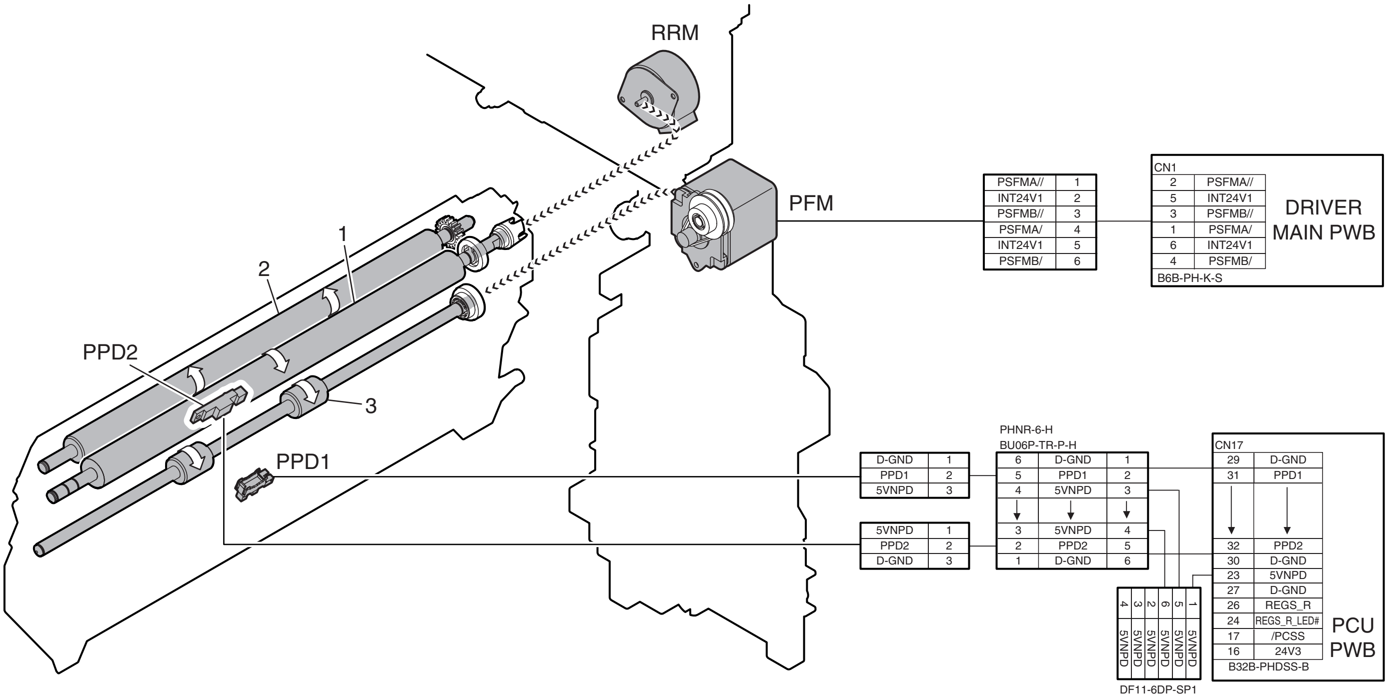
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Pickup roller	Mechanism parts	○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [11]-40)
2	Paper feed roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [11]-41)
3	Separation roller		○	○	○	○	○	○	○	○	○	○	○	○	○	(P/G No.: [10]-4)
4	Torque limiter		×	×	×	×	×	×	×	×	×	×	×	×	×	
5	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	○	



[F] PAPER TRANSPORT SECTION

1. Electrical and mechanism relation diagram




RRM
PFM
1
2
3
PPD2
PPD1
PSFMA// 1
INT24V1 2
PSFMB// 3
PSFMA/ 4
INT24V1 5
PSFMB/ 6
CN1
2 PSFMA//
5 INT24V1
3 PSFMB//
1 PSFMA/
6 INT24V1
4 PSFMB/
B6B-PH-K-S
DRIVER MAIN PWB
D-GND 1
PPD1 2
5VNPD 3
5VNPD 1
PPD2 2
D-GND 3
PHNR-6-H
BU06P-TR-P-H
6 D-GND 1
5 PPD1 2
4 5VNPD 3
3 5VNPD 4
2 PPD2 5
1 D-GND 6
4 5VNPD
3 5VNPD
2 5VNPD
6 5VNPD
5 5VNPD
1 5VNPD
DF11-6DP-SP1
CN17
29 D-GND
31 PPD1
32 PPD2
30 D-GND
23 5VNPD
27 D-GND
26 REGS_R
24 REGS_R_LED#
17 /PCSS
16 24V3
B32B-PHDSS-B
PCU PWB

Signal name	Name	Function/Operation
PFM	Transport motor	Transport drive between the resist roller and the paper feed section. Transport drive between the resist roller and the right door section.
PPD1	Resist front detection	Detects paper before the resist roller.
PPD2	Resist detection	Detects paper after the resist roller.
RRM	Resist motor	Controls the drive and ON/OFF of the resist roller.

No.	Name	Function/Operation
1	Resist roller (Drive)	Transport paper to the transfer section./ Controls the transport timing of paper and adjusts relationship between images and paper.
2	Resist roller (Idle)	Applies a pressure to paper and the resist roller to supply transport power of the transport roller to paper.
3	Transport roller 8 (Drive)	Transport the paper to the resist roller.

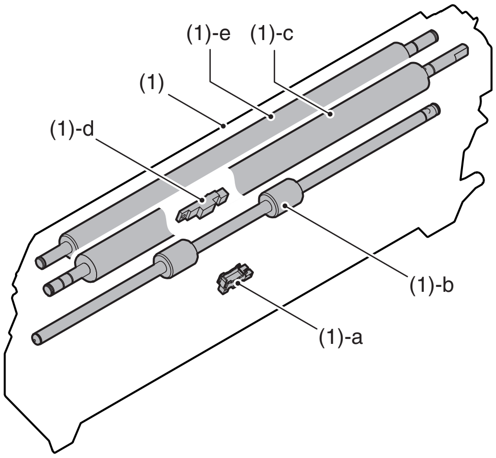
2. Operational descriptions

A. Paper transport section

Paper is fed from each paper feed section and transported to the resist roller by the transport rollers. ON/OFF control of each transport roller is made by the paper transport clutch. The resist roller controls the relative positions of transported paper and the transfer image. The resist roller is driven by the transport motor. The relative positions of paper and the transfer image are determined by the ON timing of the transport motor.

3. Disassembly and assembly

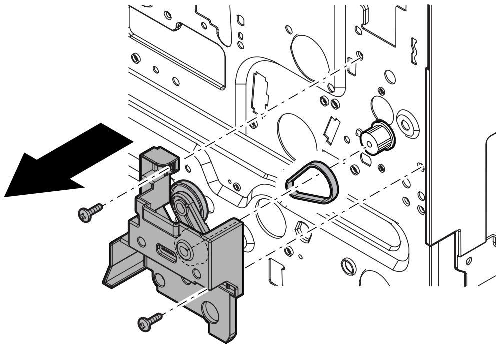
A. Paper transport section



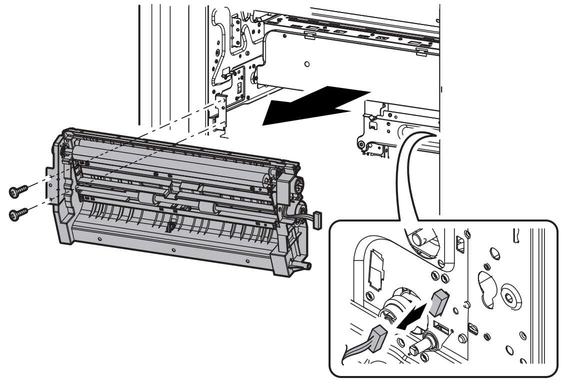
Unit		Parts		Maintenance
(1)	Resist roller unit	a	Resist front detection	
		b	Transport roller 8 (Drive)	×○
		c	Resist roller (Drive)	×○
		d	Resist detection	
		e	Resist roller (Idle)	×○

(1) Resist roller unit

1) Remove the developing unit (K).
2) Remove the drum unit (K).
3) Remove the primary transfer unit.
4) Remove the tray paper feed unit 1.
5) Remove the rear cabinet.
6) Remove the ADU connection drive.

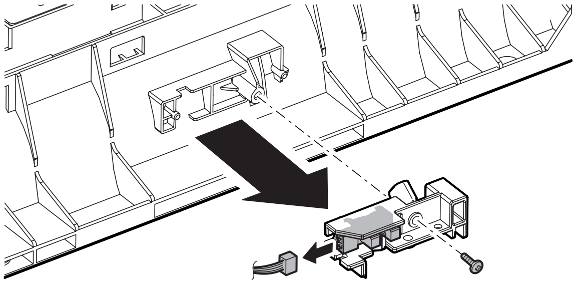


7) Remove the connector and the screws, then remove the resist roller unit.



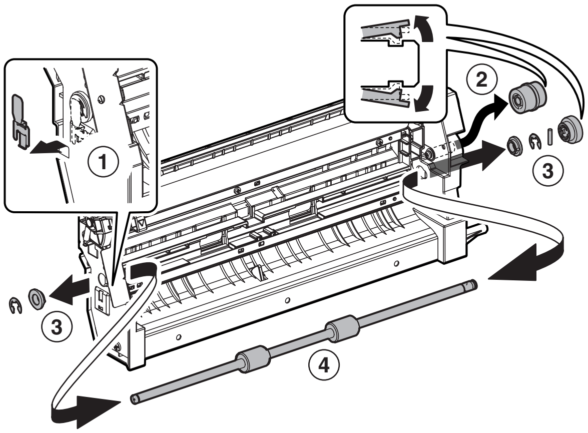
a. Resist front detection

1) Remove the resist roller unit.
2) Remove the sensor holder.



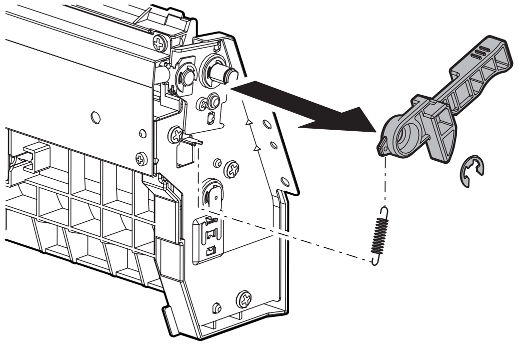
b. Transport roller 8 (Drive)

1) Remove the resist roller unit.
2) Remove the grounding plate. Remove the parts, and remove the transport roller 8 (Drive).

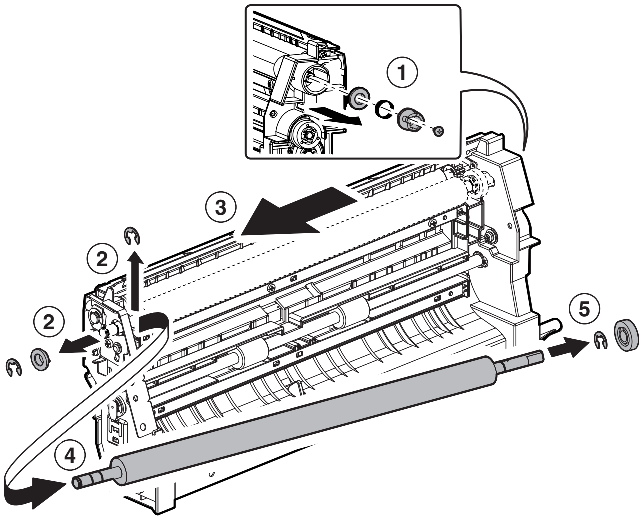


c. Resist roller (Drive)

1) Remove the resist roller unit.
2) Remove the spring and the E-ring. Remove the JAM release handle.

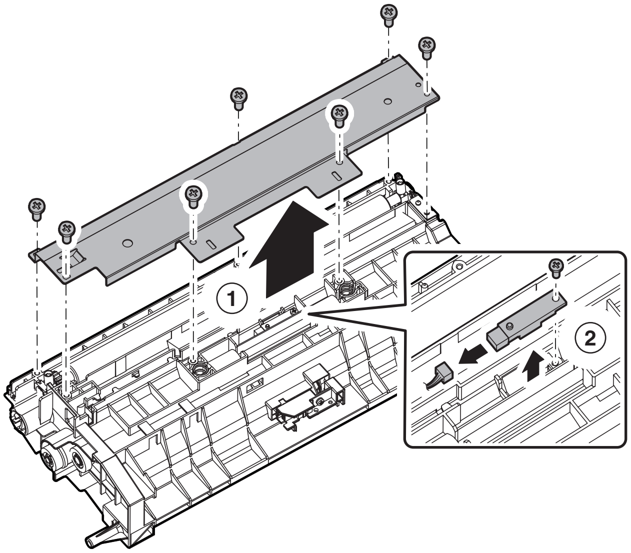


3) Remove the parts. Slide the resist roller (Drive) to the front side. Remove the parallel pin, the PS gear, and the E-ring from the resist roller (Drive).



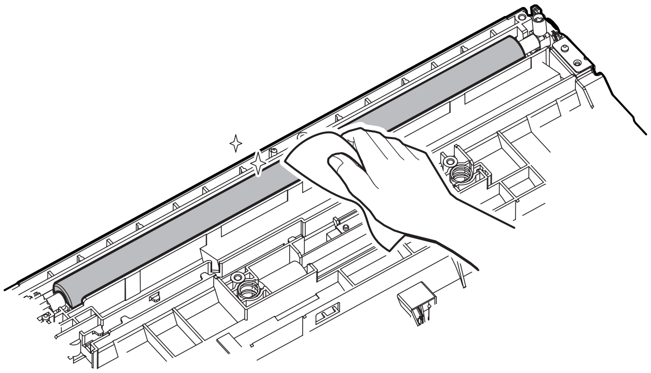
d. Resist detection

1) Remove the resist roller unit.
2) Remove the PS stay, then remove the resist detector.



e. Resist roller (Idle)

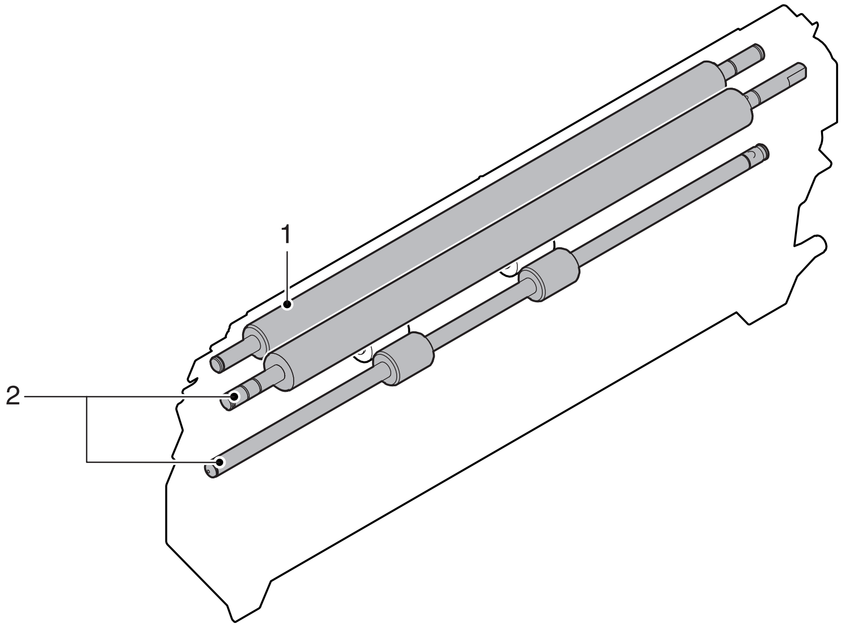
1) Remove the resist roller unit.
2) Remove the PS stay.
3) Clean the resist roller (idle).



4. Maintenance

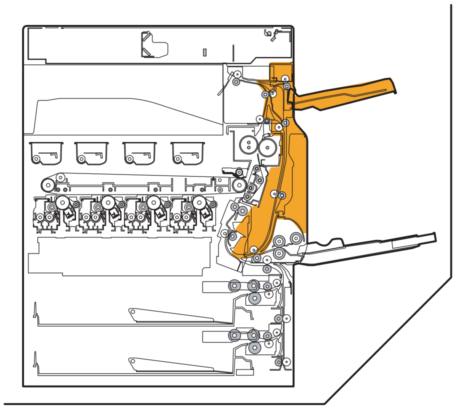
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

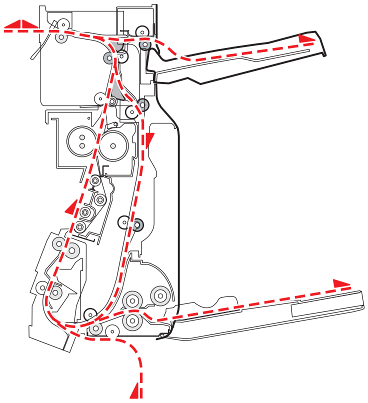
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark: Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	PS follower roller	Mechanism parts	×	○	○	○	○	○	○	○	○	○	○	○	○	
2	Transport rollers		○	○	○	○	○	○	○	○	○	○	○	○	○	

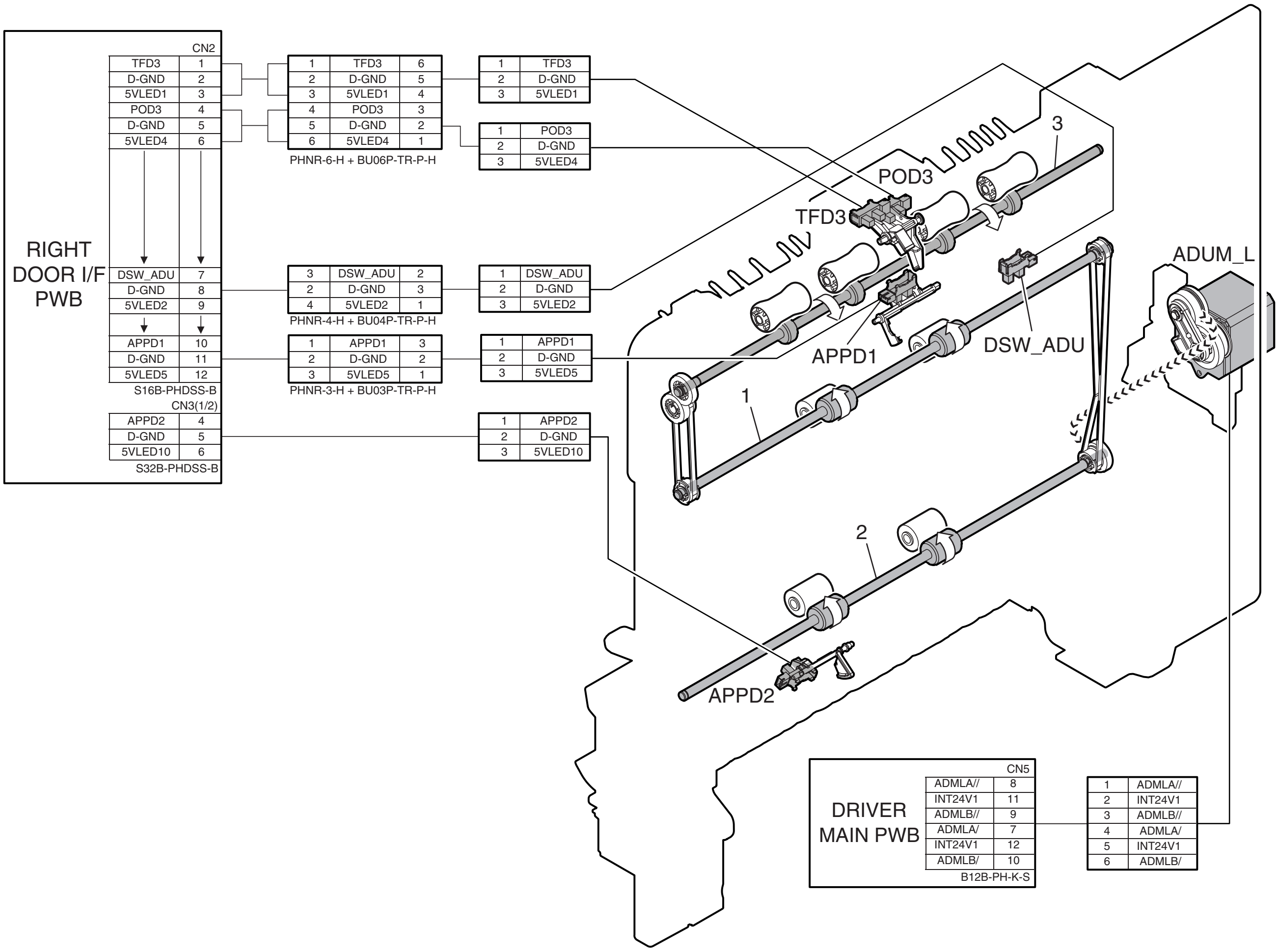


[G] DUPLEX SECTION

1. Electrical and mechanism relation diagram






RIGHT DOOR I/F PWB
CN2
TFD3 1
D-GND 2
5VLED1 3
POD3 4
D-GND 5
5VLED4 6
DSW_ADU 7
D-GND 8
5VLED2 9
APPD1 10
D-GND 11
5VLED5 12
S16B-PHDSS-B
CN3(1/2)
APPD2 4
D-GND 5
5VLED10 6
S32B-PHDSS-B
1 TFD3 6
2 D-GND 5
3 5VLED1 4
4 POD3 3
5 D-GND 2
6 5VLED4 1
PHNR-6-H + BU06P-TR-P-H
1 TFD3
2 D-GND
3 5VLED1
1 POD3
2 D-GND
3 5VLED4
3 DSW_ADU 2
2 D-GND 3
4 5VLED2 1
PHNR-4-H + BU04P-TR-P-H
1 DSW_ADU
2 D-GND
3 5VLED2
1 APPD1 3
2 D-GND 2
3 5VLED5 1
PHNR-3-H + BU03P-TR-P-H
1 APPD1
2 D-GND
3 5VLED5
1 APPD2
2 D-GND
3 5VLED10
3
POD3
TFD3
ADUM_L
APPD1
DSW_ADU
1
2
APPD2
DRIVER MAIN PWB
CN5
ADMLA// 8
INT24V1 11
ADMLB// 9
ADMLA/ 7
INT24V1 12
ADMLB/ 10
B12B-PH-K-S
1 ADMLA//
2 INT24V1
3 ADMLB//
4 ADMLA/
5 INT24V1
6 ADMLB/

Signal name	Name	Function/Operation
ADUM_L	ADU motor lower	Drives the right door section.
APPD1	ADU transport path detection 1	Detects paper pass in the upstream of the duplex (ADU).
APPD2	ADU transport path detection 2	Detects paper pass in the midstream of the duplex (ADU).
DSW_ADU	ADU transport open/close detection	Duplex (ADU) cover open/close detection
POD3	Right tray paper exit detection	Detects the paper exit into the right tray.
TFD3	Detects the right tray paper exit full.	Detects the right tray paper exit full.

No.	Name	Function/Operation
1	Transport roller 10 (Drive)	Transports the paper transported from the transport roller 13 to the transport roller 11.
2	Transport roller 11 (Drive)	Transports the paper transported from the transport roller 10 to the transport roller 12.
3	Paper exit roller 2 (Drive)	Used to discharge paper.

2. Operational descriptions

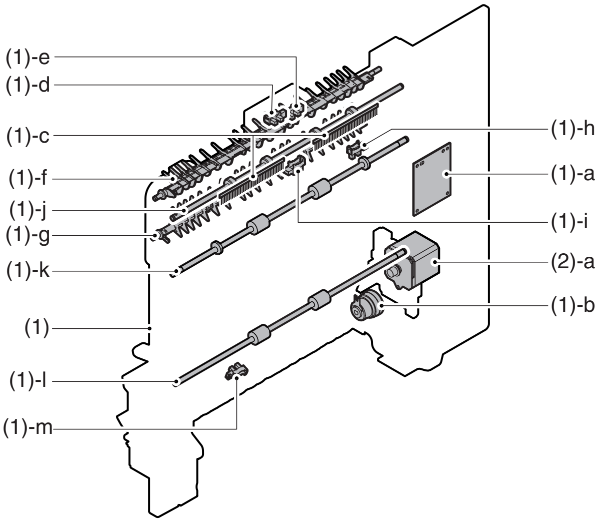
A. Duplex section

- Paper is transported from the fusing section and sent to the transport roller 13 driven by the paper exit drive motor and to the paper exit roller 1.

  At that time, paper passes under the ADU reverse gate guide.
- After the specified time from detection of paper lead edge by POD1, the paper exit drive motor is rotated forward, and after the specified time, it is rotated reversely.
- At that time, paper passes the right side of the ADU gate guide by its own weight.
- The transport rollers 10 and 11 are driven by the ADU motor lower, and paper is transported to the duplex paper feed position.
- Paper is stopped at the duplex paper feed position, and transported to the inside of the machine again.

3. Disassembly and assembly

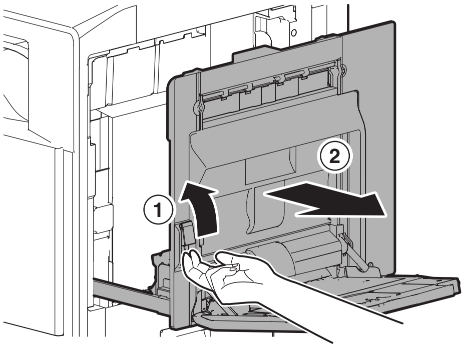
A. Duplex section



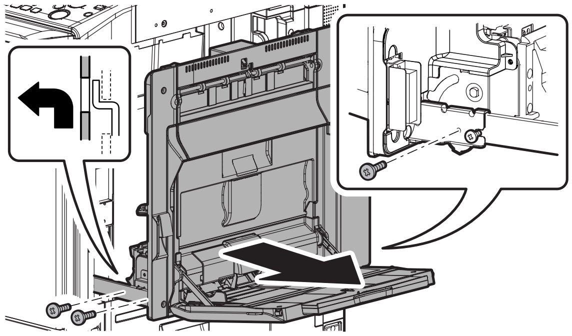
Unit		Parts		Maintenance
(1)	Right door unit	a	RD I/F PWB	
		b	Manual paper feed clutch	
		c	Discharge brush	×
		d	Detects the right tray paper exit full.	
		e	Right tray paper exit detection	
		f	ADU reverse gate	
		g	ADU gate lower	
		h	ADU transport open/close detection	
		i	ADU transport path detection 1	
		j	Paper exit roller 2 (Drive)	×○
		k	Transport roller 10 (Drive)	×○
		l	Transport roller 11 (Drive)	×○
		m	ADU transport path detection 2	
(2)	Others	a	ADU motor lower	

(1) Right door unit

1) Open the right door unit.

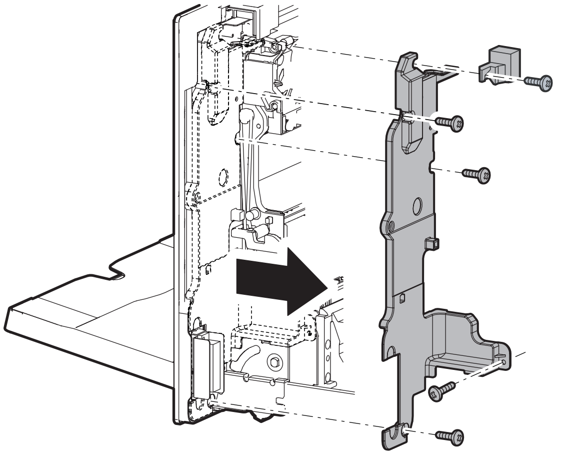


2) Remove the right door unit.

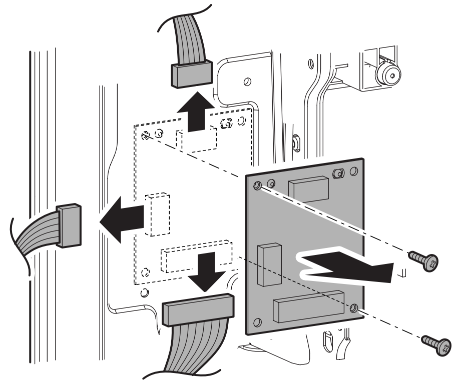


a. RD I/F PWB

1) Open the right door unit.
2) Remove the connector cover, and remove the ADU inner cover.

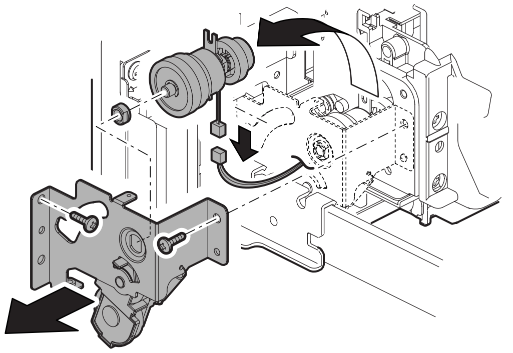


3) Remove the connector, and remove the RD I/F PWB.

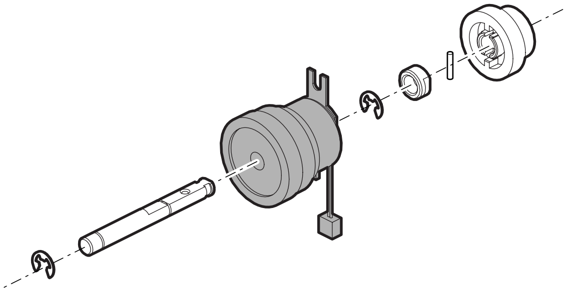


b. Manual paper feed clutch

1) Open the right door unit.
2) Remove the connector cover ADU inner cover.
3) Remove the MF drive connection plate. Disconnect the connector, then remove the manual paper feed clutch unit.



4) Remove the manual paper feed clutch.

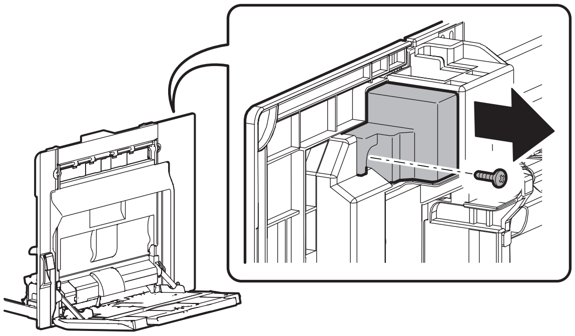


c. Discharge brush

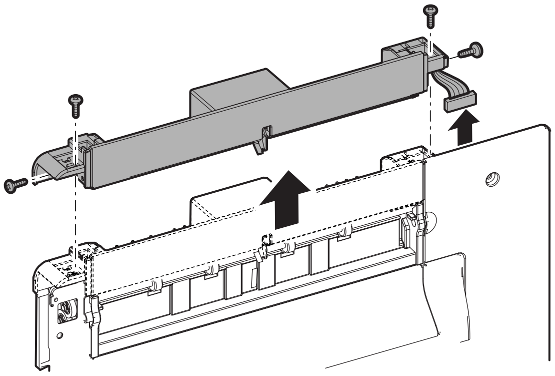
d. Detects the right tray paper exit full.

e. Right tray paper exit detection

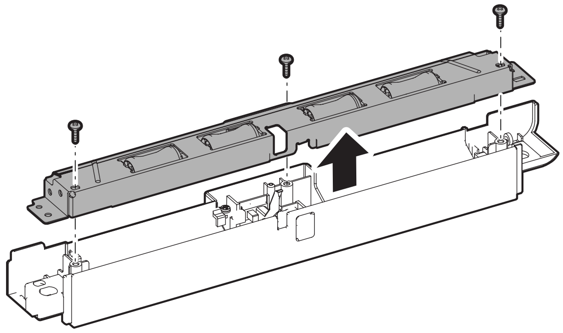
1) Open the right door unit.
2) Remove the connector cover.



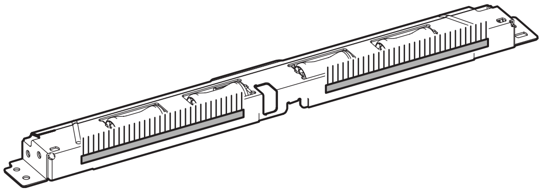
3) Remove the right paper exit upper cabinet unit, and disconnect the connector.



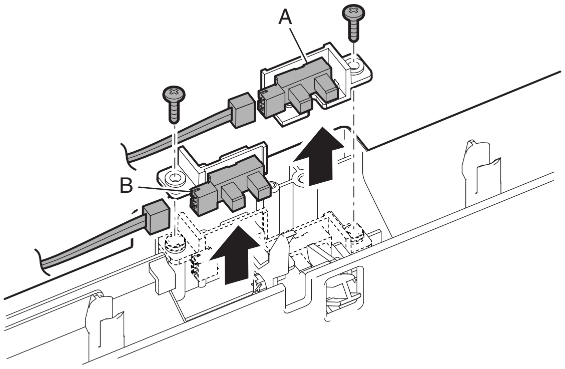
4) Remove the right paper exit PG upper.



5) Check the discharge brush.

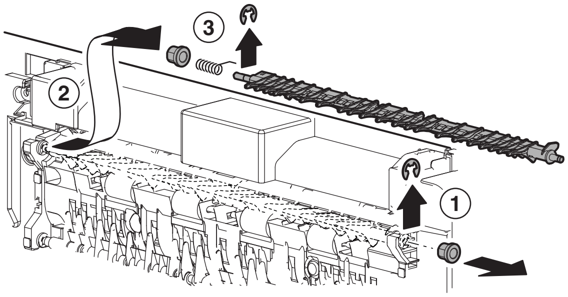


6) Remove each sensor mounting plate. Right tray paper exit full detection (A), right tray paper exit detection (B)



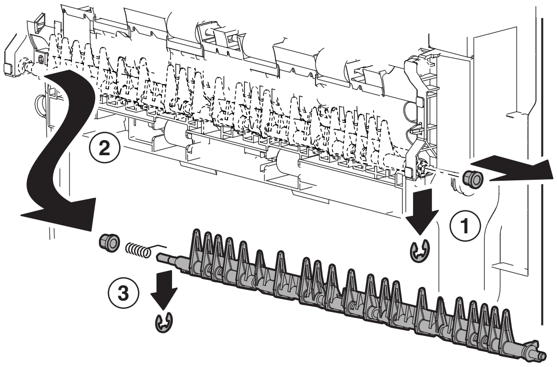
f. ADU reverse gate

1) Open the right door unit.
2) Remove the parts and remove the ADU reverse gate.



g. ADU gate lower

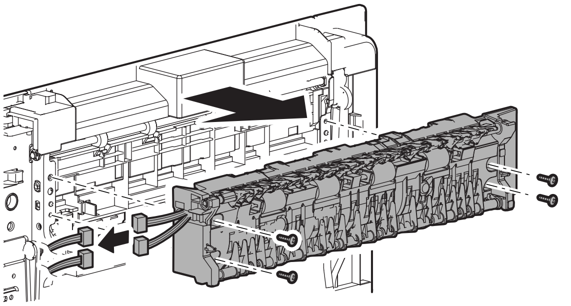
1) Open the right door unit.
2) Remove the parts, and remove the ADU gate lower.



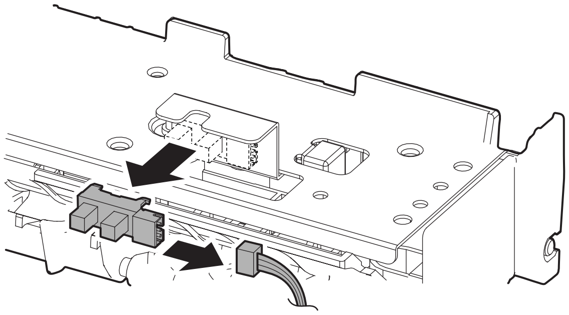
h. ADU transport open/close detection

i. ADU transport path detection 1

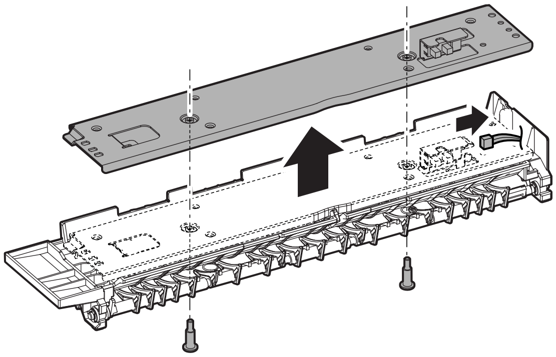
1) Open the right door unit.
2) Remove the ADU inner cover.
3) Disconnect the connector, and remove the reverse PG unit.



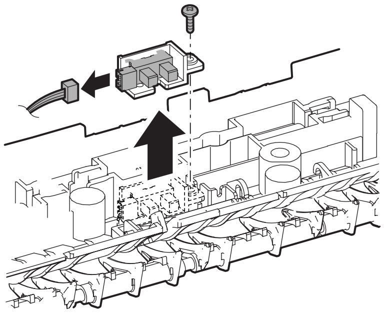
4) Remove the ADU transport open/close detector.



5) Remove the ADU stay upper unit.

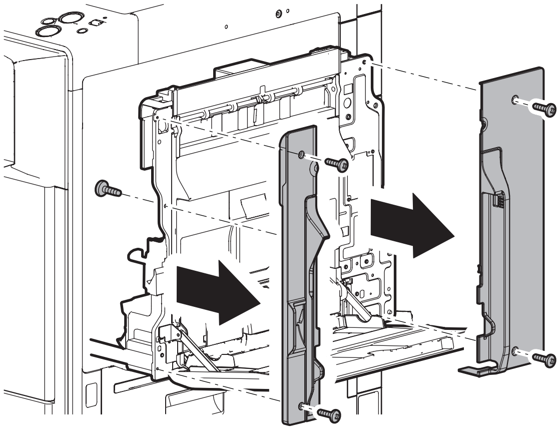


6) Remove the ADU transport path detector 1.

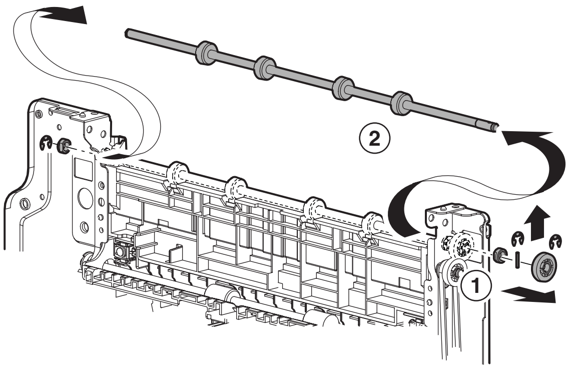


j. Paper exit roller 2 (Drive)

1) Open the right door unit.
2) Remove the connector cover ADU inner cover.
3) Remove the ADU cabinet F and the ADU cabinet R.



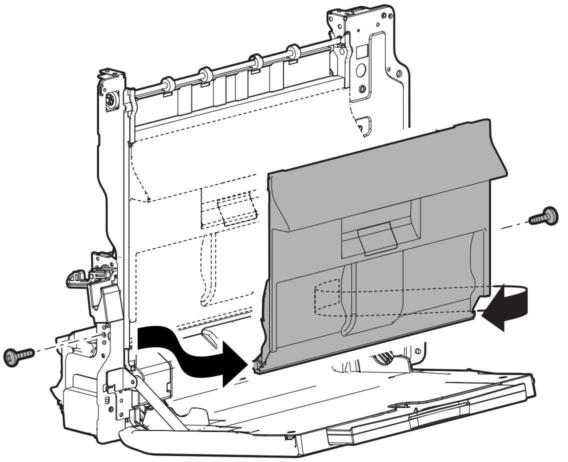
4) Remove the reverse PG unit.
5) Remove each parts, then remove the transport roller 2 (drive).



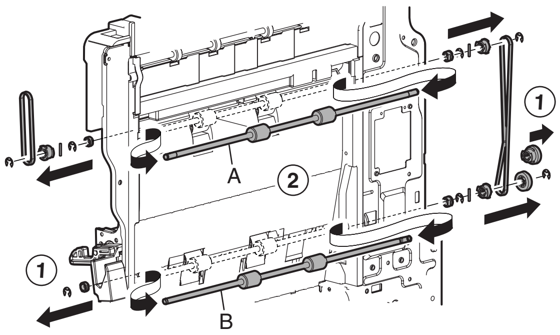
k. Transport roller 10 (Drive)

l. Transport roller 11 (Drive)

1) Open the right door unit.
2) Remove the connector cover ADU inner cover.
3) Remove the ADU cabinet F and the ADU cabinet R.
4) Remove the reverse PG unit.
5) Remove the upper transport fulcrum holder, and remove the ADU open/close door.

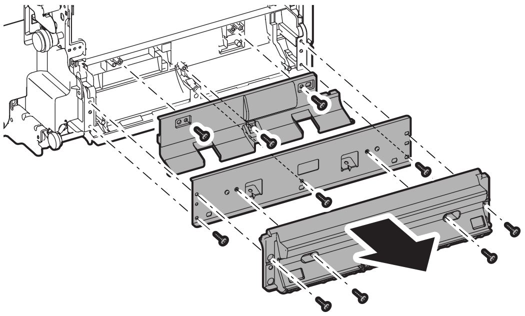


6) Remove each parts, and remove the trasnport roller 10 (drive) (A) and the trasnport roller 11 (drive) (B).

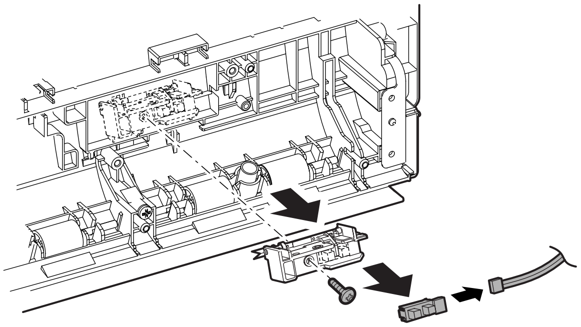


m. ADU transport path detection 2

1) Open the right door unit.
2) Remove the right door transport PG, the follower pressure plate, and the ADU waste toner cover.



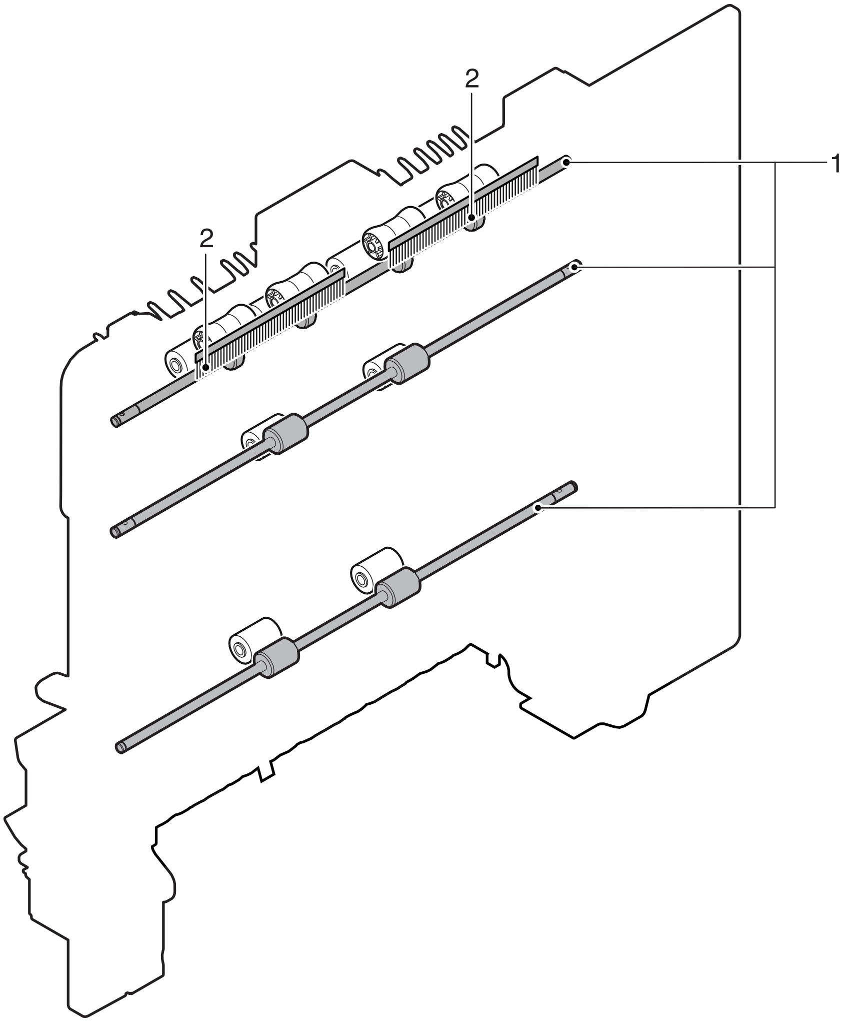
3) Remove the ADU trasnsport path detector 2.



4. Maintenance

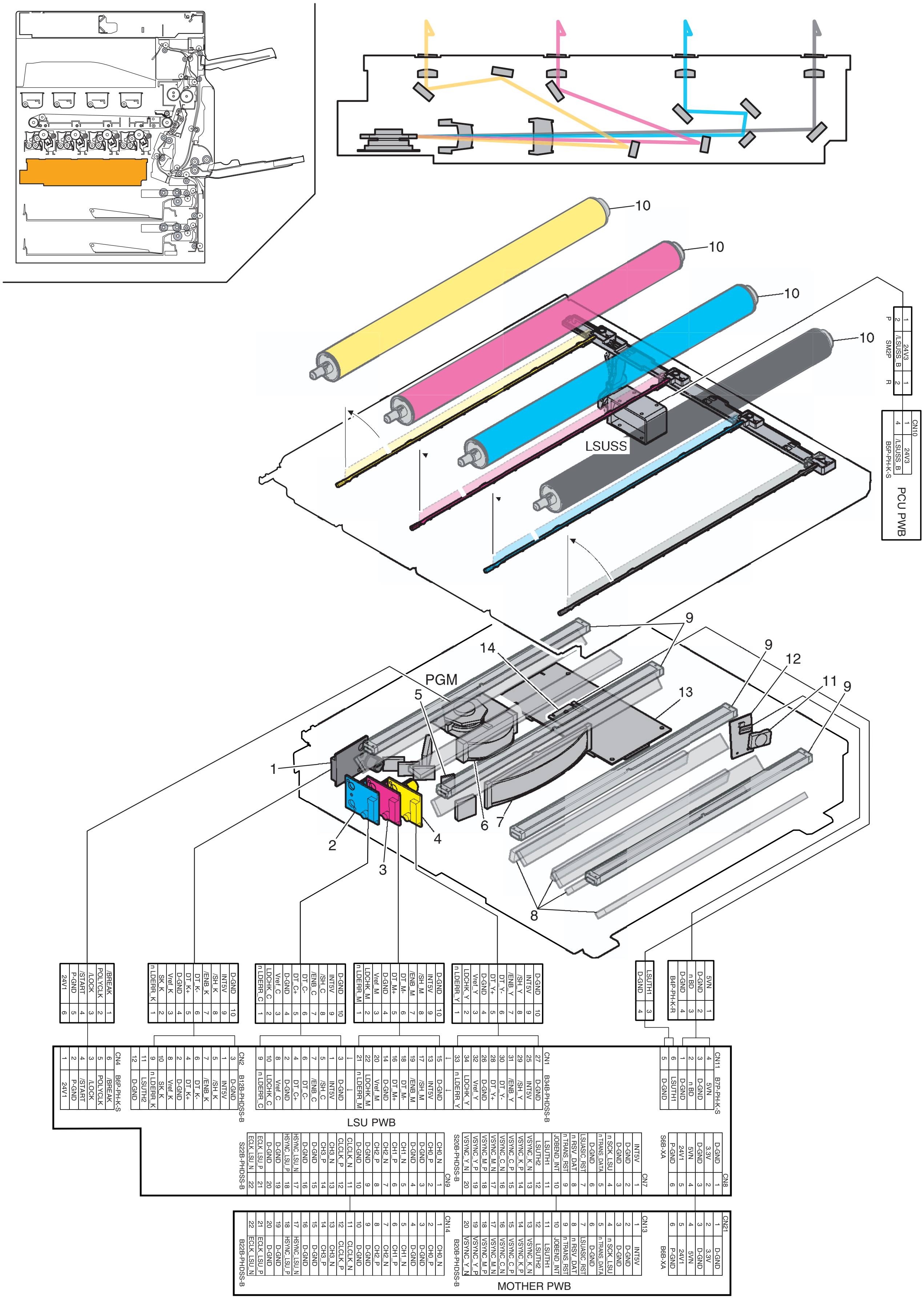
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Transport rollers	Mechanism parts	○	○	○	○	○	○	○	○	○	○	○	○	○	
2	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	×	
3	Gears		×	×	×	×	×	×	×	×	×	×	×	×	×	When checking, apply to the necessary positions. (Specified positions)



[H] LSU SECTION

1. Electrical and mechanism relation diagram


10
10
10
10
SM2P
P
R
1 24V3
2 /LSUSS_B
CN10
1 24V3
4 /LSUSS_B
B5P-PH-K-S
PCU PWB
LSUSS
PGM
1
2
3
4
5
6
7
8
9
11
12
13
14
1 /BREAK
2 POLYCLK
3 /LOCK
4 /START
5 P-GND
6 24V1
1 n LDERR_K
2 SK_K
3 Vref_K
4 D-GND
5 DT_K+
6 DT_K-
7 /ENB_K
8 /SH_K
9 INT5V
10 D-GND
1 n LDERR_C
2 LDCHK_C
3 Vref_C
4 D-GND
5 DT_C+
6 DT_C-
7 /ENB_C
8 /SH_C
9 INT5V
10 D-GND
1 n LDERR_M
2 LDCHK_M
3 Vref_M
4 D-GND
5 DT_M+
6 DT_M-
7 /ENB_M
8 /SH_M
9 INT5V
10 D-GND
1 n LDERR_Y
2 LDCHK_Y
3 Vref_Y
4 D-GND
5 DT_Y+
6 DT_Y-
7 /ENB_Y
8 /SH_Y
9 INT5V
10 D-GND
3 LSUTH1
4 D-GND
1 5VN
2 D-GND
3 n BD
4 D-GND
B4P-PH-K-R
CN4 B6P-PH-K-S
6 /BREAK
5 POLYCLK
3 /LOCK
4 /START
2 P-GND
1 24V1
CN2 B12B-PHDSS-B
3 D-GND
1 INT5V
5 /SH_K
7 /ENB_K
6 DT_K-
4 DT_K+
2 D-GND
8 Vref_K
10 SK_K
9 n LDERR_K
11 LSUTH2
12 D-GND
9 n LDERR_C
10 LDCHK_C
8 Vref_C
2 D-GND
4 DT_C+
6 DT_C-
7 /ENB_C
5 /SH_C
1 INT5V
3 D-GND
↓ ↓
21 n LDERR_M
22 LDCHK_M
20 Vref_M
14 D-GND
16 DT_M+
18 DT_M-
19 /ENB_M
17 /SH_M
13 INT5V
15 D-GND
↓ ↓
33 n LDERR_Y
34 LDCHK_Y
32 Vref_Y
26 D-GND
28 DT_Y+
30 DT_Y-
31 /ENB_Y
29 /SH_Y
25 INT5V
27 D-GND
CN1 B34B-PHDSS-B
CN11 B7P-PH-K-S
4 5VN
3 D-GND
2 n BD
1 D-GND
6 LSUTH1
5 D-GND
LSU PWB
CN9 S22B-PHDSS-B
1 CH0_N
2 CH0_P
3 D-GND
4 D-GND
5 CH1_N
6 CH1_P
7 CH2_N
8 CH2_P
9 D-GND
10 D-GND
11 CLCLK_N
12 CLCLK_P
13 CH3_N
14 CH3_P
15 D-GND
16 D-GND
17 HSYNC_LSU_N
18 HSYNC_LSU_P
19 D-GND
20 D-GND
21 ECLK_LSU_P
22 ECLK_LSU_N
CN7 S20B-PHDSS-B
1 INT5V
2 D-GND
3 D-GND
4 n SCK_LSU
5 n TRANS_DATA
6 D-GND
7 LSUASIC_RST
8 n RSV_DAT
9 n TRANS_RST
10 JOBEND_INT
11 LSUTH1
12 LSUTH2
13 VSYNC_K_N
14 VSYNC_K_P
15 VSYNC_C_P
16 VSYNC_C_N
17 VSYNC_M_N
18 VSYNC_M_P
19 VSYNC_Y_P
20 VSYNC_Y_N
CN8 S6B-XA
1 D-GND
2 3.3V
3 D-GND
4 5VN
5 24V1
6 P-GND
CN14 B22B-PHDSS-B
1 CH0_N
2 CH0_P
3 D-GND
4 D-GND
5 CH1_N
6 CH1_P
7 CH2_N
8 CH2_P
9 D-GND
10 D-GND
11 CLCLK_N
12 CLCLK_P
13 CH3_N
14 CH3_P
15 D-GND
16 D-GND
17 HSYNC_LSU_N
18 HSYNC_LSU_P
19 D-GND
20 D-GND
21 ECLK_LSU_P
22 ECLK_LSU_N
CN13 B20B-PHDSS-B
1 INT5V
2 D-GND
3 D-GND
4 n SCK_LSU
5 n TRANS_DATA
6 D-GND
7 LSUASIC_RST
8 n RSV_DAT
9 n TRANS_RST
10 JOBEND_INT
11 LSUTH1
12 LSUTH2
13 VSYNC_K_N
14 VSYNC_K_P
15 VSYNC_C_P
16 VSYNC_C_N
17 VSYNC_M_N
18 VSYNC_M_P
19 VSYNC_Y_P
20 VSYNC_Y_N
CN21 B6B-XA
1 D-GND
2 3.3V
3 D-GND
4 5VN
5 24V1
6 P-GND
MOTHER PWB

Signal name	Name	Function/Operation
PGM	Polygon motor	Laser beam is reflected at the constant speed rotation.

No.	Name	Function/Operation
1	LD PWB (K)	Controls laser beam flashing and the output value.
2	LD PWB (C)	
3	LD PWB (M)	
4	LD PWB (Y)	
5	Cylindrical lens	Converges laser beams and focus.
6	fθ lens 1	Laser beams are refracted so that the laser scan speed on the OPC drum is even in both ends and at the center.
7	fθ lens 2	
8	Reflection mirror	Secures the path for laser beams.
9	Cylindrical lens	Converges laser beams, and focus on the OPC drum.
10	OPC drum	Forms electrostatic latent images according to laser beams.
11	Convergence lens for BD	Converges laser beams to the BD PWB.
12	BD PWB	Detects the timing for starting laser scanning.
13	LSU CNT PWB	Laser beams are controlled and the polygon motor control signal is generated according to the PCU PWB control signal and image data.
14	LSU therminstor	Measures the temperature in LSU.

2. Operational descriptions

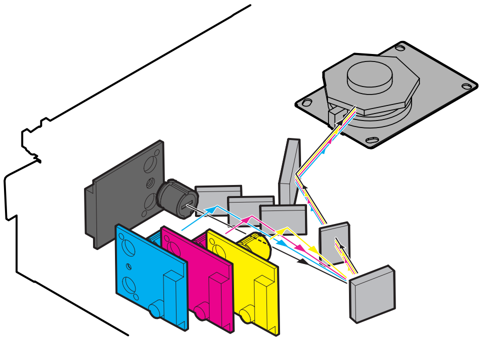
A. LSU section

(1) Outline

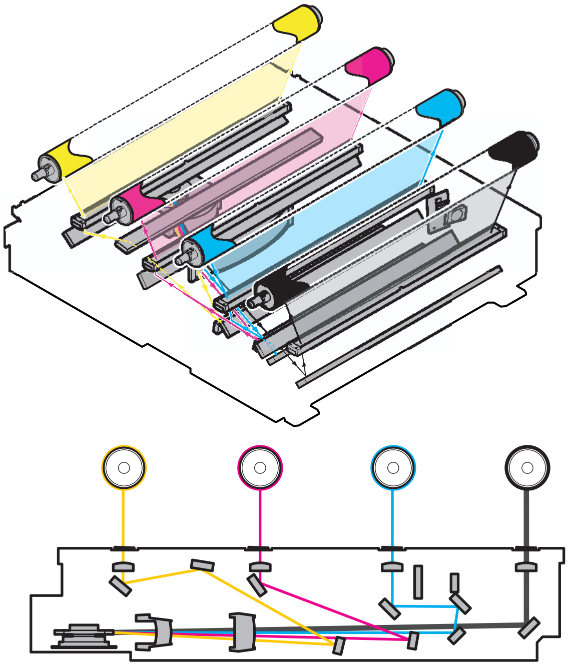
Image data sent from the image process circuit through the mother are converted into laser beams to be radiated onto the OPC drum surface. The LSU unit is composed of the primary system including optical elements such as lasers and the polygon mirror and the mirror which assures the optical path and the scan system which includes the optical elements including the polygon mirror and the mirror which assures the optical path.

(2) Composition

(Primary system)



(Scan system)



(On the polygon mirror)

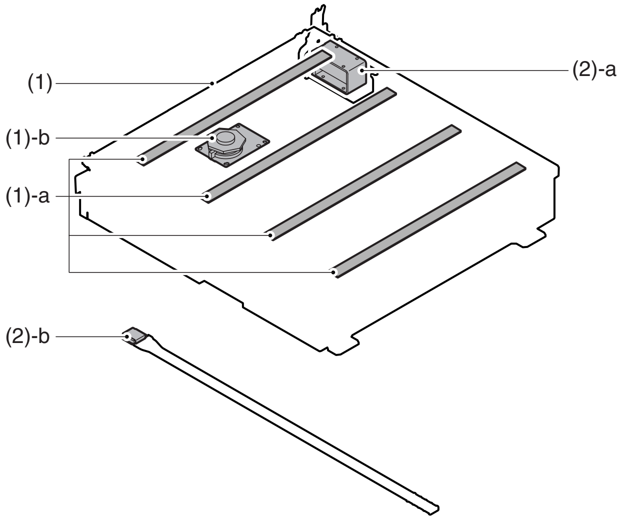
Model	Number of mirror surfaces	Rotating speed	Bearing	Remark
MX-2700N/G	7 surfaces	25106rpm	OIL	

(3) Outline of LSU specifications

Effective scan width:	307mm
Resolution:	600dpi
Beam diameter:	Main scan = 50 to 65µm, Sub scan = 60 to 75µm
Laser power:	Max. 0.65mW
LD wavelength:	770 to 795nm

3. Disassembly and assembly

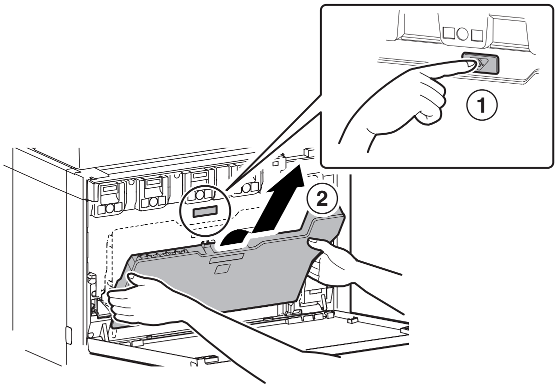
A. LSU section



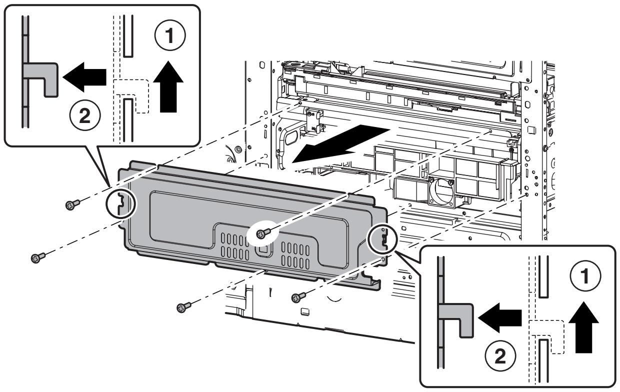
Unit			Parts	Maintenance
(1)	LSU	a	Dust-proof glass	○
		b	Polygon motor	
(2)	Others	a	LSU shutter solenoid	
		b	Cleaning base	○▲

(1) LSU

1) Remove the left cabinet rear lower and the left cabinet. (Refer to Left Cabinet Rear Lower and Left Cabinet in External Outfit Section.)
2) Remove the waste toner box.

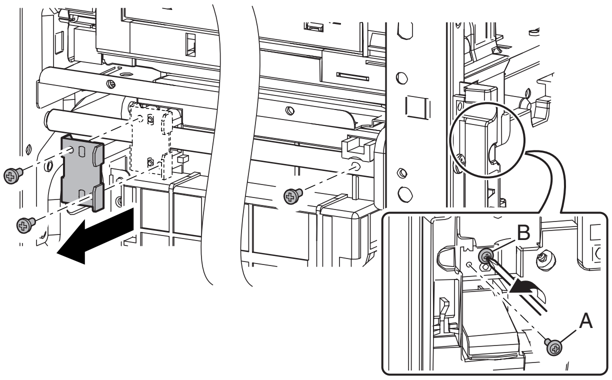


3) Remove the LSU left plate PA.

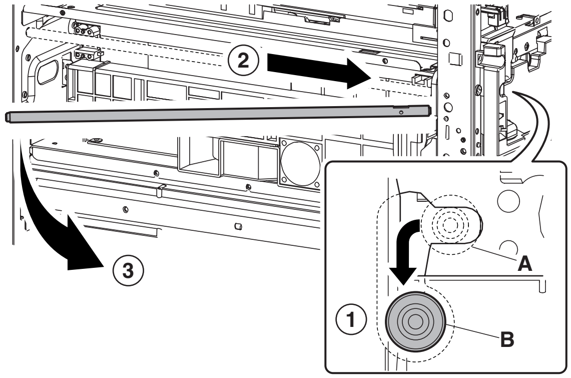


4) Remove the LSU slant adjustment plate screw (A), and loosen the screw (B).

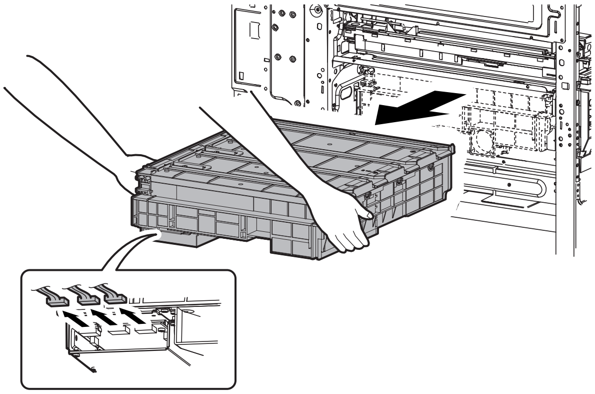
   Remove the LSU shaft fixing plate. Remove the screws.



5) Shift the front side of the LSU shaft from (A) to (B), and remove the LSU shaft.

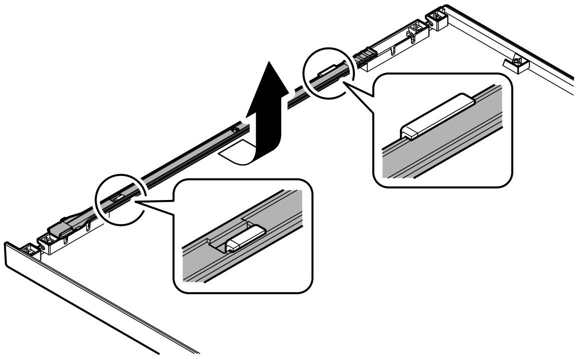


6) Disconnect the connector, and remove the LSU.

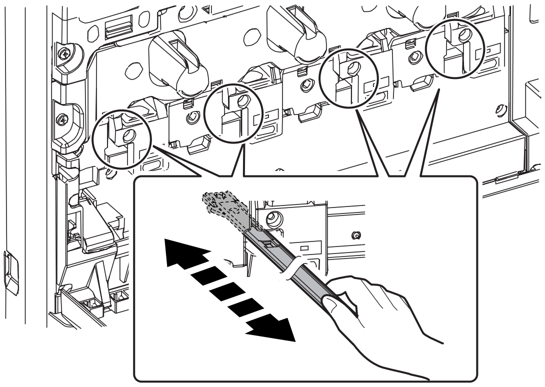


a. Dust-proof glass

1) Remove the waste toner box.
2) Remove the LSU cleaning stick from the front cover.

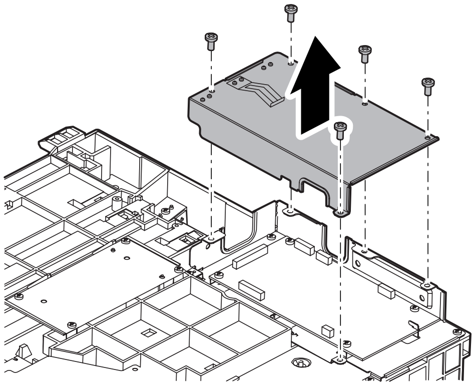


3) Insert the LSU cleaning rod and slide it back and forth a few times to clean the dust-proof glass.



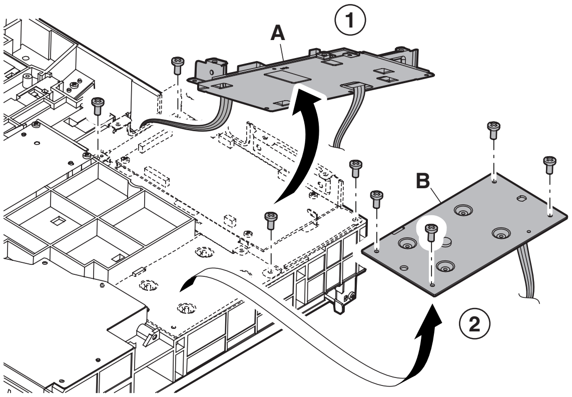
b. Polygon motor

1) Remove the LSU.
2) Remove the screws, and remove the LSU CNT PWB cover R.



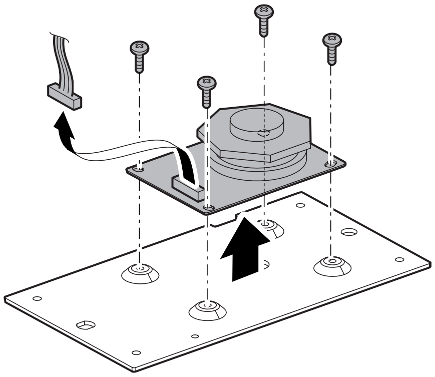
3) Remove the screws, then lift up the LSU CNT PWB cover F (A).

   Remove the screws, and lift up the polygon motor unit (B).



4) Remove the connector and the screws, then remove the polygon motor.

   * When installing, do not touch the moving section of the polygon mirror and the mirror surface.

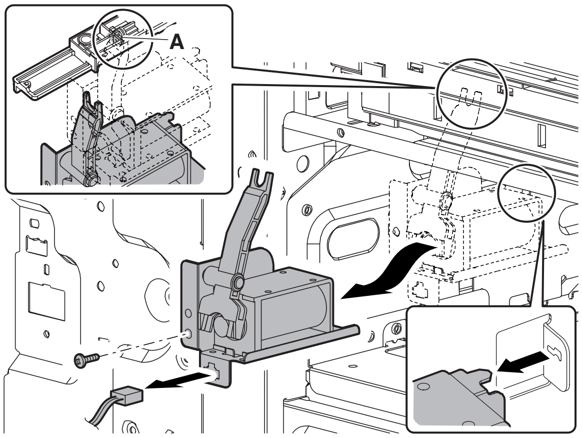


(2) Others

a. LSU shutter solenoid 1

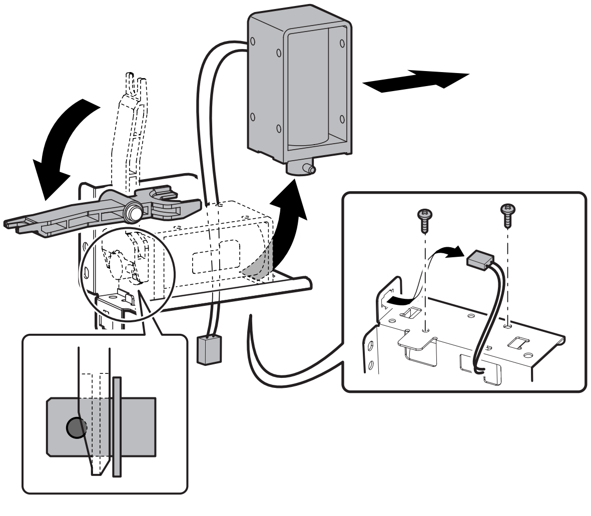
1) Remove the LSU.
2) Remove the connector and the screws, then remove the LSU shutter solenoid unit.

   * When installing, the shutter U-groove is engaged with the shutter lever arm shaft section (A).



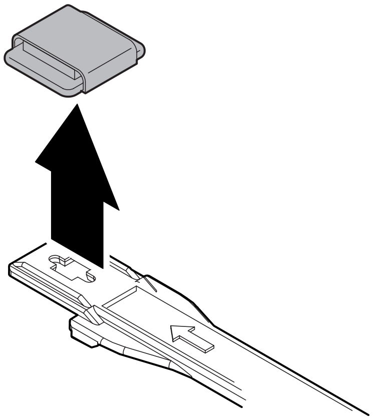
3) Remove the screws, and remove the LSU shutter solenoid 1.

   * When installing, engage the solenoid pin with the shutter lever arm.



b. Cleaning base

1) Remove the waste toner box.
2) Remove the LSU cleaning stick from the front cover.
3) Remove the cleaning base from the LSU cleaning rod.

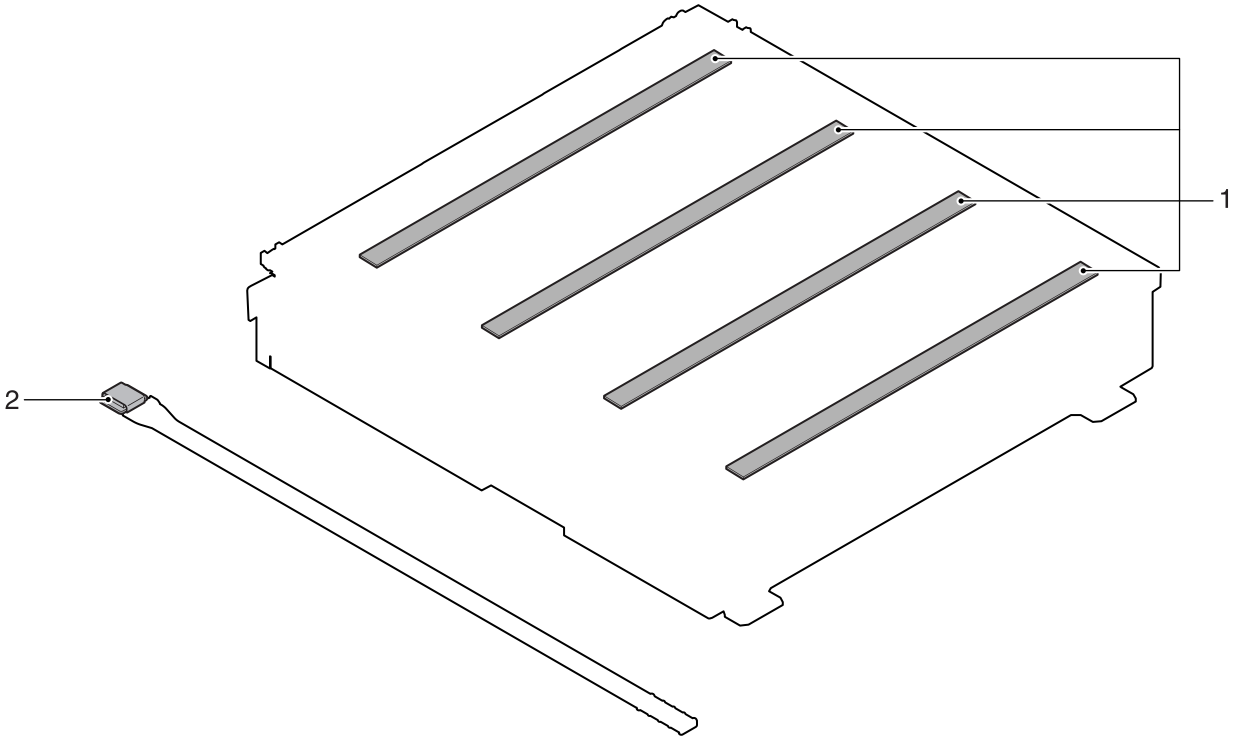


4. Maintenance

A. LSU section

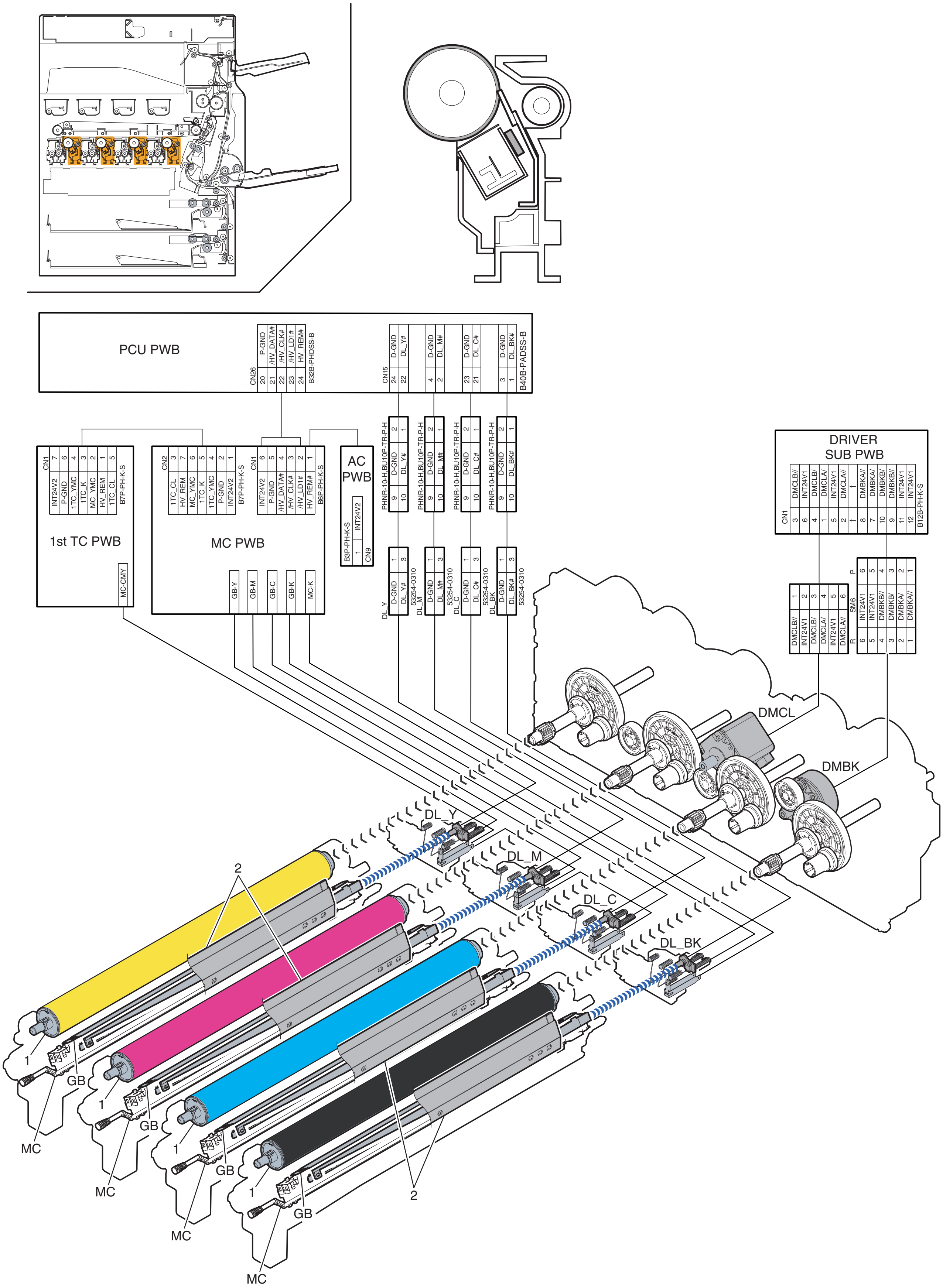
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/ Item No. (Only the replacement parts are described.)
1	Dust-proof glass	Mechanism parts	○	○	○	○	○	○	○	○	○	○	○	○	○	
2	Cleaning base		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [2]-35)



[i] PHOTOCONDUCTOR SECTION

1. Electrical and mechanism relation diagram


PCU PWB
CN26
20 P-GND
21 /HV_DATA#
22 /HV_CLK#
23 /HV_LD1#
24 HV_REM#
B32B-PHDSS-B
CN15
24 D-GND
22 DL_Y#
4 D-GND
2 DL_M#
23 D-GND
21 DL_C#
3 D-GND
1 DL_BK#
B40B-PADSS-B
1st TC PWB
CN1
7 INT24V2
6 P-GND
4 1TC_YMC
3 1TC_K
2 MC_YMC
1 HV_REM
5 1TC_CL
B7P-PH-K-S
MC-CMY
MC PWB
CN2
3 1TC_CL
7 HV_REM
6 MC_YMC
5 1TC_K
4 1TC_YMC
2 P-GND
1 INT24V2
B7P-PH-K-S
CN1
6 INT24V2
5 P-GND
4 /HV_DATA#
3 /HV_CLK#
2 /HV_LD1#
1 HV_REM#
B6P-PH-K-S
GB-Y
GB-M
GB-C
GB-K
MC-K
AC PWB
CN9
1 INT24V2
B3P-PH-K-S
PHNR-10-H,BU10P-TR-P-H
9 D-GND 2
10 DL_Y# 1
PHNR-10-H,BU10P-TR-P-H
9 D-GND 2
10 DL_M# 1
PHNR-10-H,BU10P-TR-P-H
9 D-GND 2
10 DL_C# 1
PHNR-10-H,BU10P-TR-P-H
9 D-GND 2
10 DL_BK# 1
DL_Y
1 D-GND
3 DL_Y#
53254-0310
DL_M
1 D-GND
3 DL_M#
53254-0310
DL_C
1 D-GND
3 DL_C#
53254-0310
DL_BK
1 D-GND
3 DL_BK#
53254-0310
DRIVER SUB PWB
CN1
3 DMCLB//
6 INT24V1
4 DMCLB/
1 DMCLA/
5 INT24V1
2 DMCLA//
↑ ↑
8 DMBKA//
7 DMBKA/
10 DMBKB/
9 DMBKB//
11 INT24V1
12 INT24V1
B12B-PH-K-S
1 DMCLB//
2 INT24V1
3 DMCLB/
4 DMCLA/
5 INT24V1
6 DMCLA//
SM6
P
R
6 INT24V1 6
5 INT24V1 5
4 DMBKB// 4
3 DMBKB/ 3
2 DMBKA/ 2
1 DMBKA// 1
DMCL
DMBK
DL_Y
DL_M
DL_C
DL_BK
2
1
GB
MC
1
GB
MC
1
GB
MC
1
GB
MC
2

Signal name	Name	Function/Operation
DMCL	Drum motor (Color)	Color photoconductor drive
DMBK	Drum motor (Black)	Black photoconductor drive
DL	Discharge lamp (Y, M, C, BK)	Light is passed to the discharge lens to drive the OPC drum surface.
MC	Main charge (Y, M, C, K)	The OPC drum surface is charged negatively.
GB	Grid (Y, M, C, K)	The OPC drum surface potential is controlled.

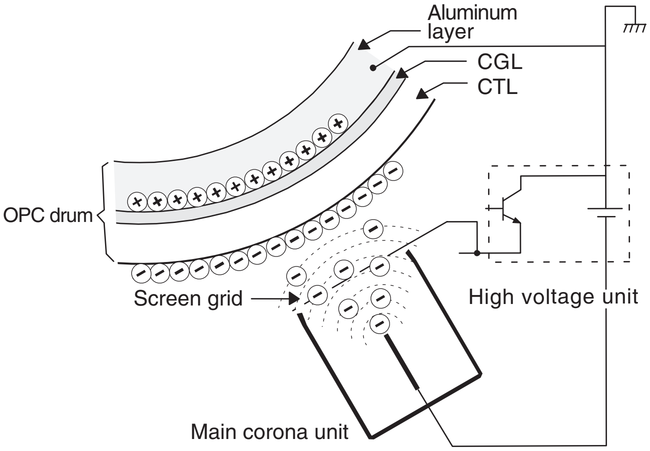
No.	Name	Function/Operation
1	OPC drum (Y, M, C, K)	Latent electrostatic images are formed.
2	Cleaning blade	Residual toner is cleaned and removed from the OPC drum surface.

2. Operational descriptions

A. OPC drum section

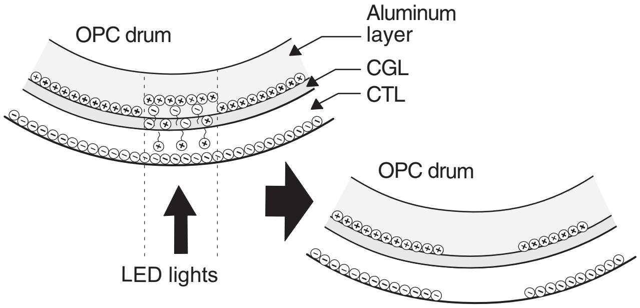
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser (writing) unit to form latent electrostatic images.

1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

2) LED lights are radiated to the OPC drum surface by the laser (writing) unit to form latent electrostatic images.



When LED lights are radiated to the OPC drum CGL, negative and positive charges are generated.

Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

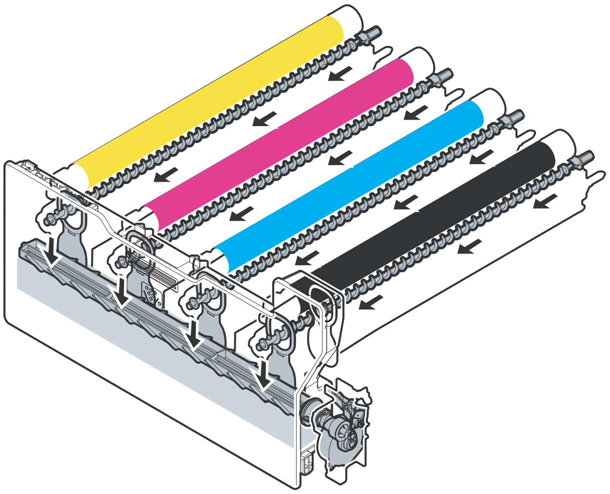
Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where LED lights are not radiated.

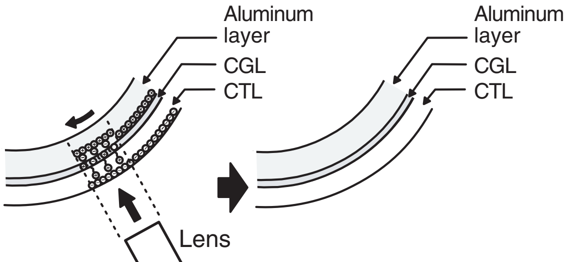
As a result, latent electrostatic images are formed on the OPC drum surface.

3) After transfer operation, remaining toner is removed by the cleaning blade.

Toner removed from the OPC drum surface is transported to the waste toner section by the waste toner transport screw.



4) The whole surface of the OPC drum is discharged.

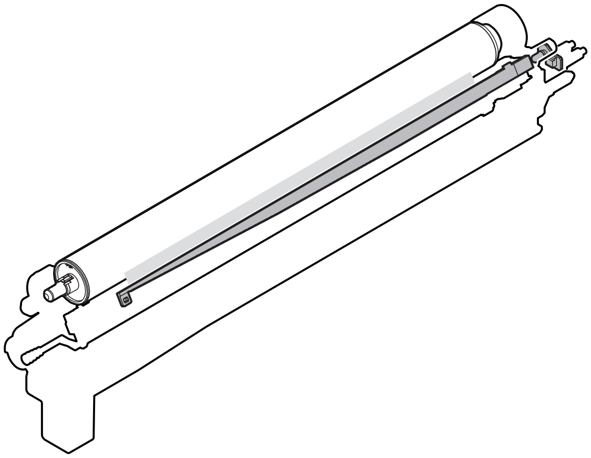


By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

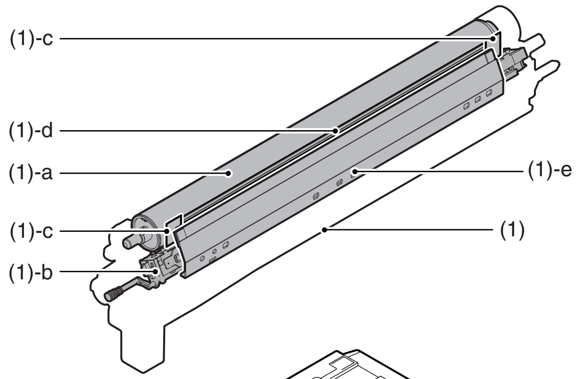
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

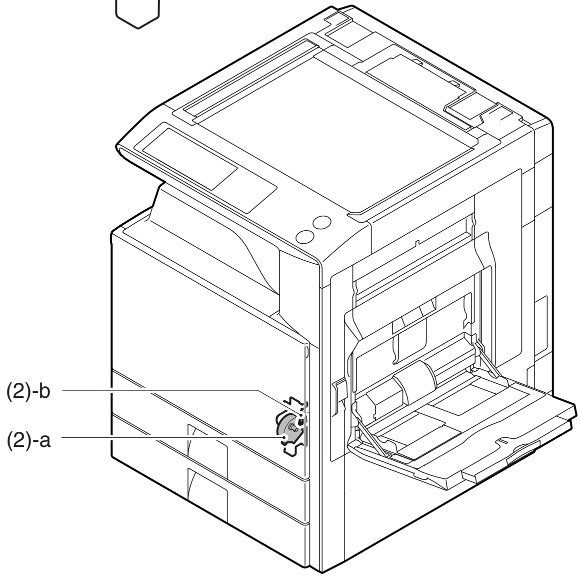
Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charged to decrease the surface voltage of the OPC drum.



3. Disassembly and assembly

A. Process drum unit

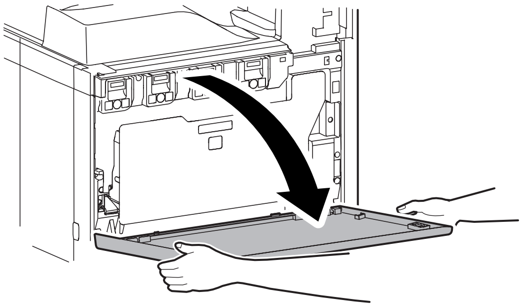




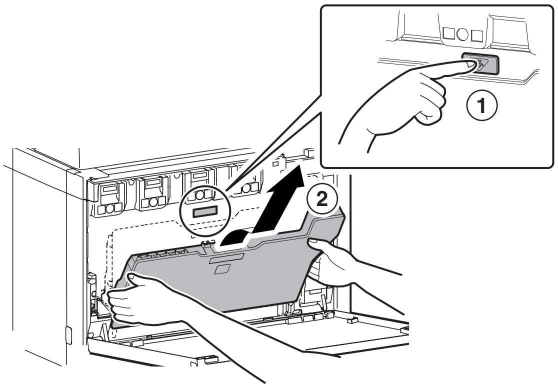
Unit		Parts		Maintenance
(1)	Drum unit	a	Drum	▲
		b	Charging unit	▲
		c	Side seal F, R	×
		d	Toner reception seal	×
		e	Cleaner blade	▲
(2)	Others	a	Waste toner drive motor	
		b	Waste toner full detection switch	

(1) Each color drum unit

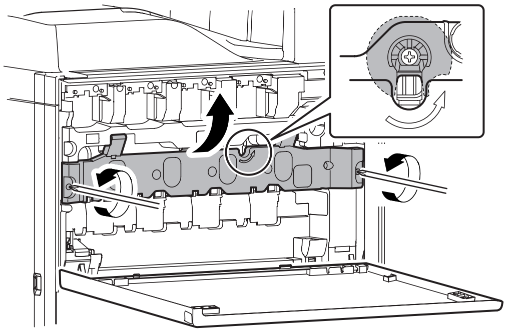
1) Open the front cover.



2) Remove the waste toner bottle unit.

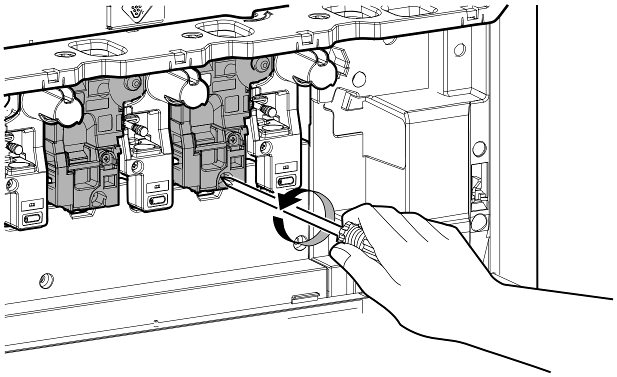


3) Loosen the blue screw. Check to confirm that lock is released, and open the drum positioning unit.

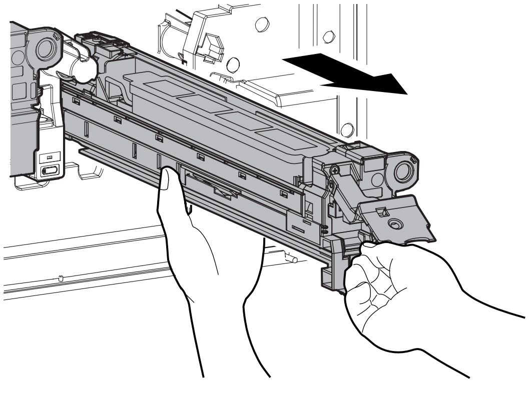


NOTE: When the transfer belt tension of the primary transfer unit is released manually, turn on the power again after completion of the work. (Power OFF-ON) This procedure initializes the transfer roller to return it to the home position.

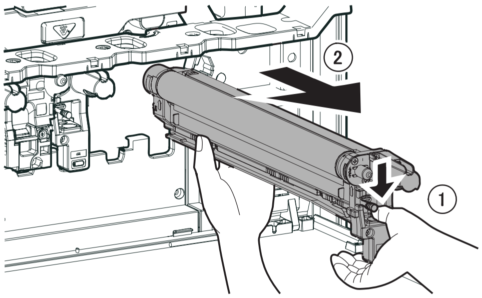
4) Loosen the fixing screw of the developing unit on the left side of each color drum unit.



5) Remove the developing unit with both hands.

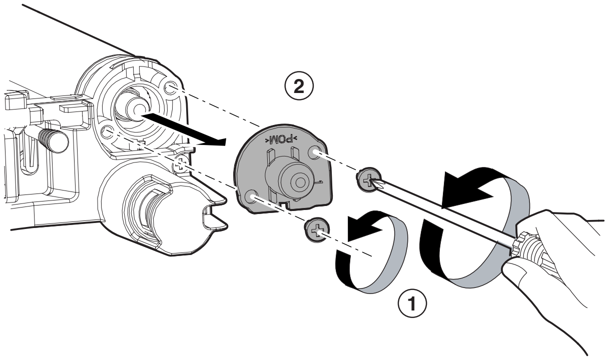


6) Hold the lock lever, and pull out each color drum unit slowly, and support the lower section of the unit with both hands to remove.

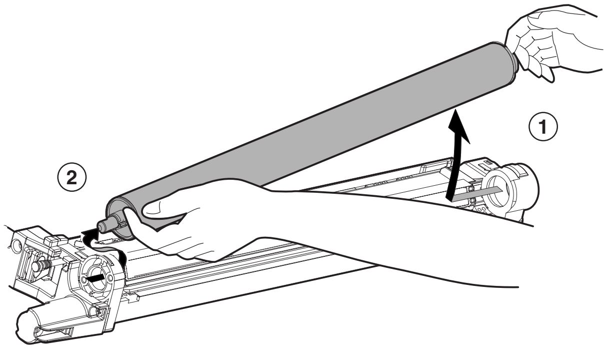


a. OPC drum

1) Remove each drum unit from the machine.
2) Remove the screws and remove the DR fixing shaft AS.

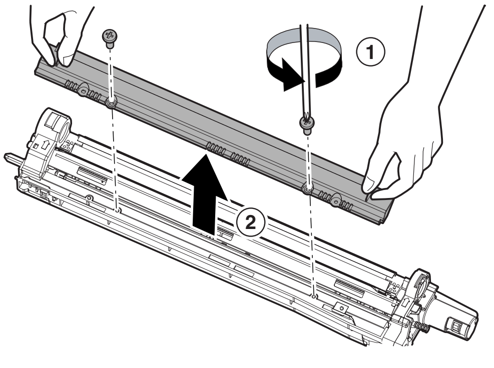


3) Slide the OPC drum to the front side, and lift the drum rear side, and remove the OPC drum from the hole in the front section.

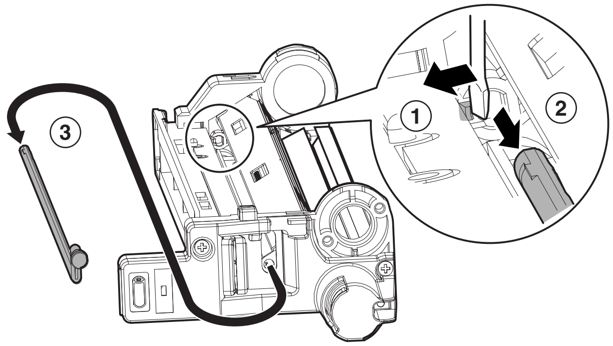


b. MC charger unit

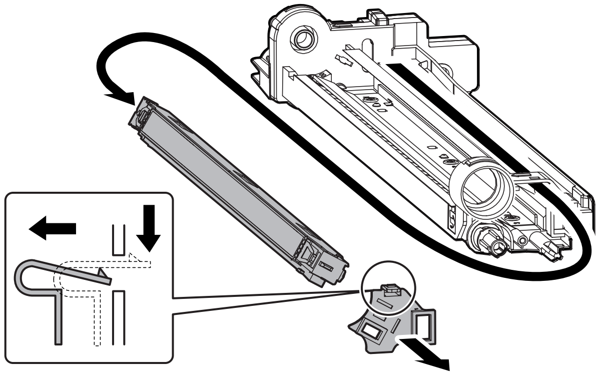
1) Remove each drum unit from the machine.
2) Remove the OPC drum.
3) Remove the screws, and remove the MC cover.



4) Disengage the lock pawl with a screwdriver, and remove the MC cleaner shaft.



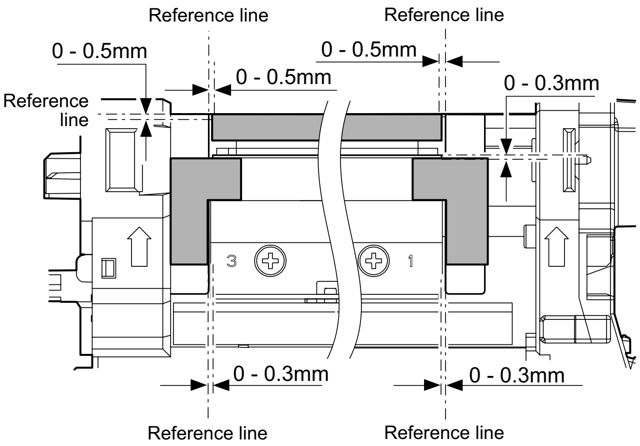
5) Release the pawl, and remove the process cover. Remove the MC charger unit.



c. Side seal F, R

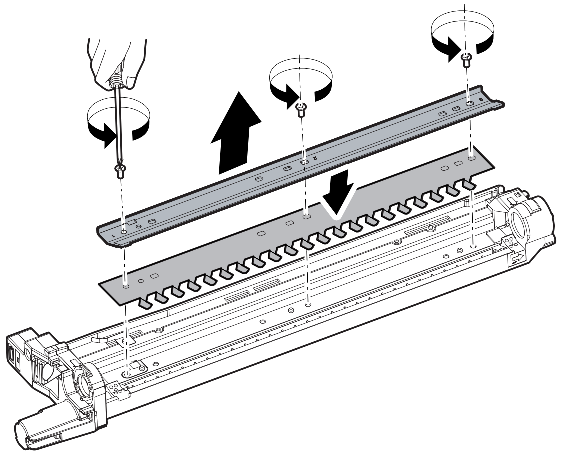
d. Toner reception seal

1) Remove each drum unit from the machine.
2) Remove the OPC drum.
3) Remove the MC charger unit.
4) Remove the side seal F/R and the toner reception seal.
   * When attaching the side seal F/R and the toner reception seal, arrange so that they are in the ranges specified in the figure below.

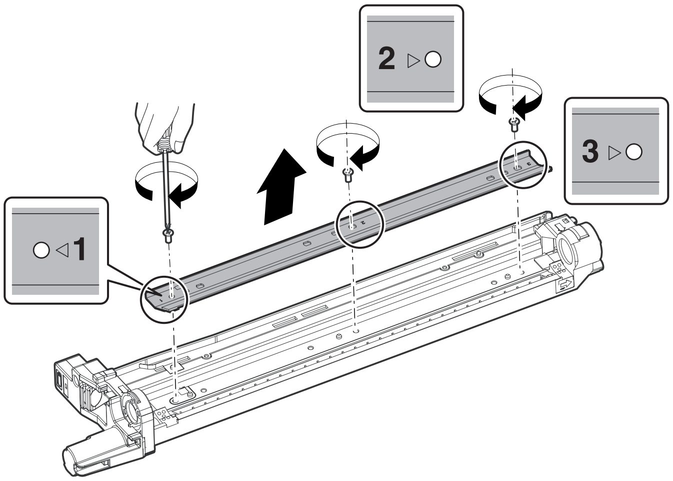

Reference line
Reference line
0 - 0.5mm
0 - 0.5mm
0 - 0.5mm
0 - 0.3mm
Reference line
3
1
0 - 0.3mm
0 - 0.3mm
Reference line
Reference line

e. Cleaner blade

1) Remove each drum unit from the machine.
2) Remove the OPC drum.
3) Remove the MC charger unit.
4) Remove the side seal F/R and the toner reception seal.
5) Remove the screws, and remove the cleaner blade.
6) Remove the toner mixing sheet from the cleaner blade.



* Tighten the screws according to the marks 1, 2, and 3.

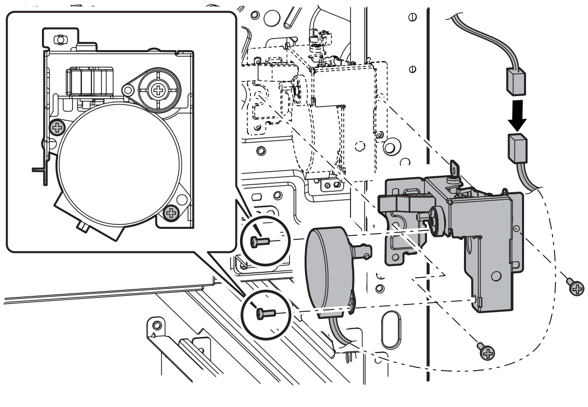


(2) Others

a. Waste toner drive motor

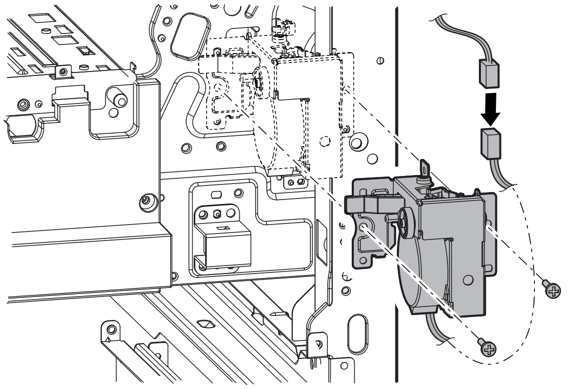
1) Remove the frame cover. (Refer to Frame Cover in External Outfit Section.)
2) Remove the connector and the screws, then remove the waste toner drive unit.

   Remove the screw, and remove the waste toner drive motor from the waste toner drive unit.



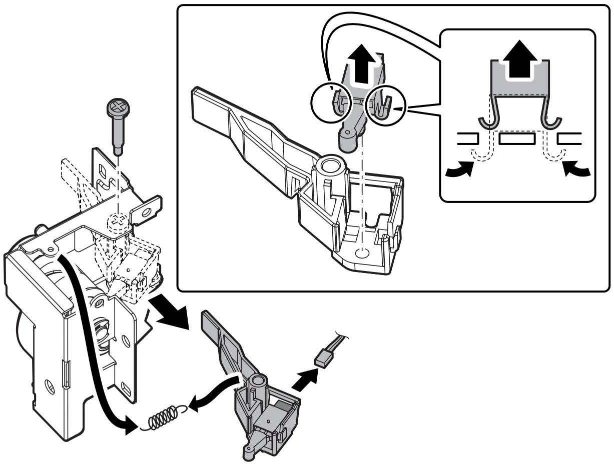
b. Waste toner full detection switch

1) Remove the frame cover. (Refer to Frame Cover in External Outfit Section.)
2) Remove the connector and the screws, then remove the waste toner drive unit.



3) Remove the screw and the spring, and remove the waste toner box empty lever.

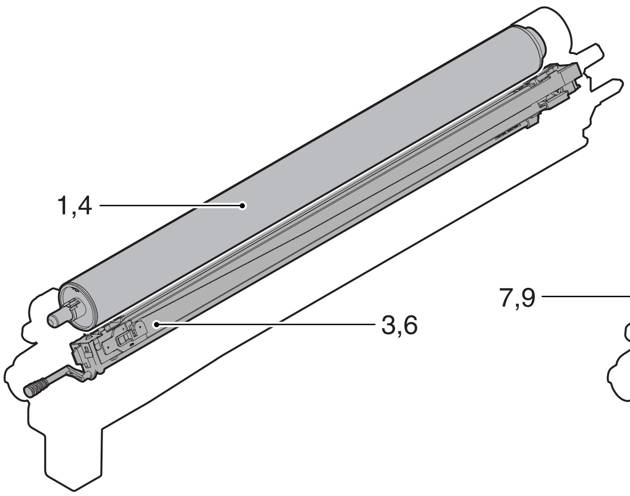
   Disengage the connector and the pawl, and remove the waste toner full detection switch.

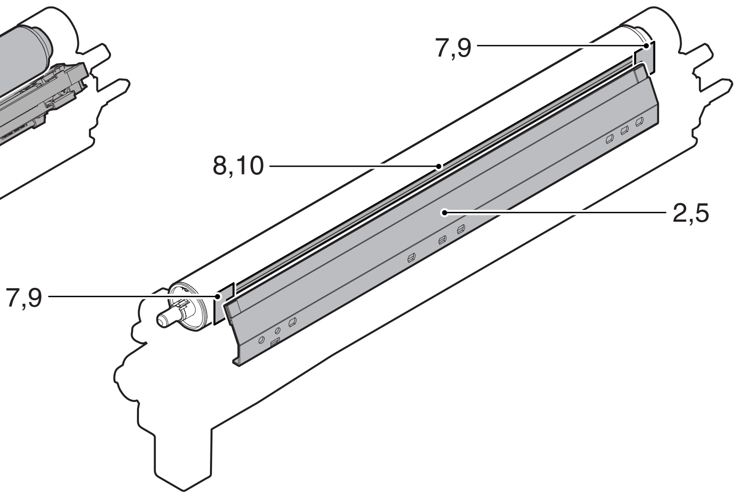


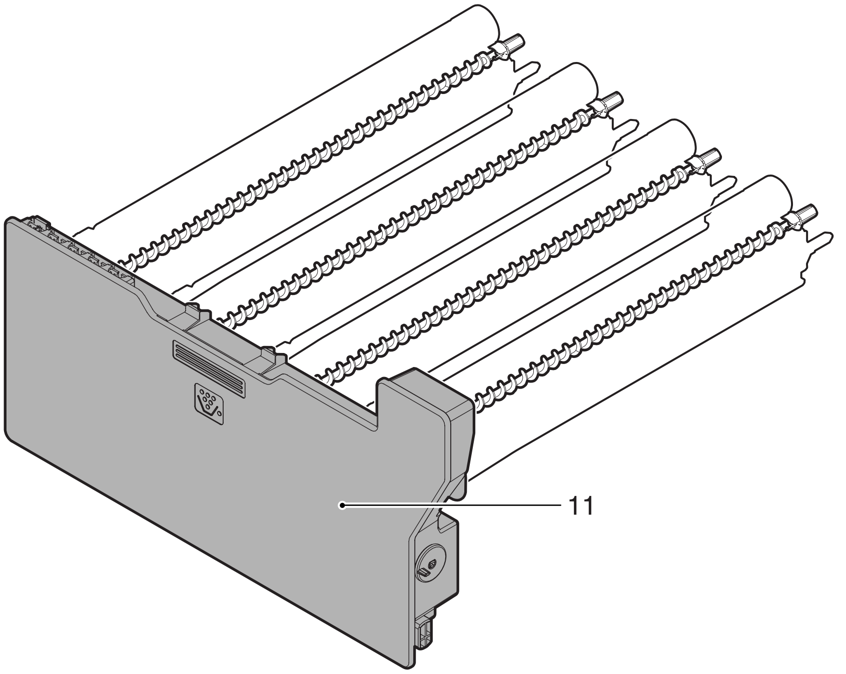
4. Maintenance

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shif the position.

No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark: Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
		Color supply			60 K		120 K		180 K		240 K		300 K		360 K	
1	Drum (BK)	Monochrome supply		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
2	Cleaner blade (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-14)
3	Charging unit (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [24]-2)
4	Drum (C)	Color supply			▲		▲		▲		▲		▲		▲	
5	Cleaner, blade (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [24]-14)
6	Charging unit (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [24]-2)
7	Side seal F/R (BK)	Mechanism parts		×	×	×	×	×	×	×	×	×	×	×	×	
8	Toner reception seal (BK)		×	×	×	×	×	×	×	×	×	×	×	×	×	
9	Side seal F/R (C)				×		×		×		×		×		×	
10	Toner reception seal (C)		×		×		×		×		×		×		×	
11	Waste toner box		×	×	×	×	×	×	×	×	×	×	×	×	×	


1,4
3,6

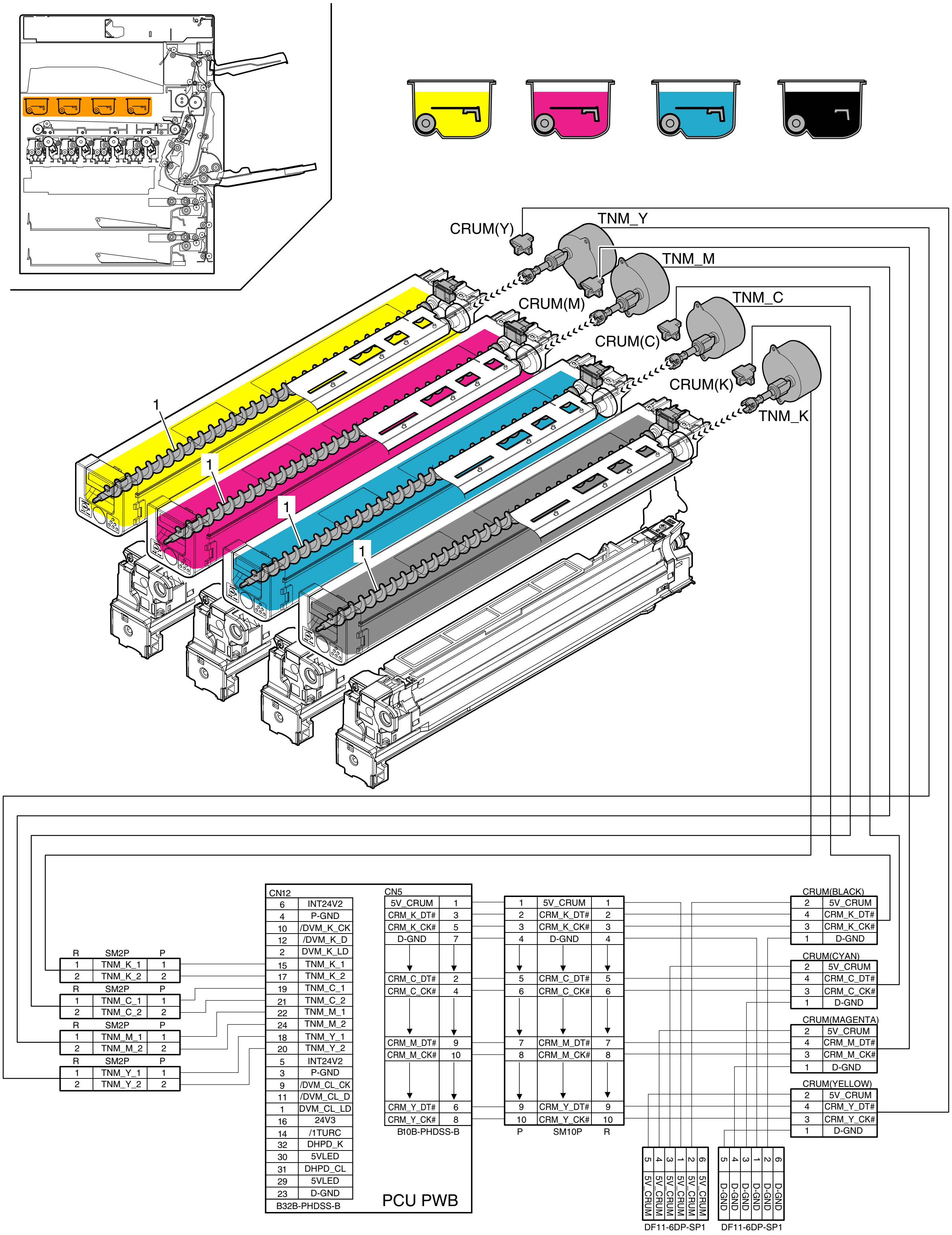

7,9
8,10
2,5
7,9


11

[J] TONER SUPPLY SECTION

1. Electrical and mechanism relation diagram

A. Toner supply section


CRUM(Y)
TNM_Y
TNM_M
CRUM(M)
TNM_C
CRUM(C)
CRUM(K)
TNM_K
1
1
1
1
R SM2P P
1 TNM_K_1 1
2 TNM_K_2 2
R SM2P P
1 TNM_C_1 1
2 TNM_C_2 2
R SM2P P
1 TNM_M_1 1
2 TNM_M_2 2
R SM2P P
1 TNM_Y_1 1
2 TNM_Y_2 2
CN12
6 INT24V2
4 P-GND
10 /DVM_K_CK
12 /DVM_K_D
2 DVM_K_LD
15 TNM_K_1
17 TNM_K_2
19 TNM_C_1
21 TNM_C_2
22 TNM_M_1
24 TNM_M_2
18 TNM_Y_1
20 TNM_Y_2
5 INT24V2
3 P-GND
9 /DVM_CL_CK
11 /DVM_CL_D
1 DVM_CL_LD
16 24V3
14 /1TURC
32 DHPD_K
30 5VLED
31 DHPD_CL
29 5VLED
23 D-GND
B32B-PHDSS-B
CN5
5V_CRUM 1
CRM_K_DT# 3
CRM_K_CK# 5
D-GND 7
CRM_C_DT# 2
CRM_C_CK# 4
CRM_M_DT# 9
CRM_M_CK# 10
CRM_Y_DT# 6
CRM_Y_CK# 8
B10B-PHDSS-B
PCU PWB
1 5V_CRUM 1
2 CRM_K_DT# 2
3 CRM_K_CK# 3
4 D-GND 4
5 CRM_C_DT# 5
6 CRM_C_CK# 6
7 CRM_M_DT# 7
8 CRM_M_CK# 8
9 CRM_Y_DT# 9
10 CRM_Y_CK# 10
P SM10P R
CRUM(BLACK)
2 5V_CRUM
4 CRM_K_DT#
3 CRM_K_CK#
1 D-GND
CRUM(CYAN)
2 5V_CRUM
4 CRM_C_DT#
3 CRM_C_CK#
1 D-GND
CRUM(MAGENTA)
2 5V_CRUM
4 CRM_M_DT#
3 CRM_M_CK#
1 D-GND
CRUM(YELLOW)
2 5V_CRUM
4 CRM_Y_DT#
3 CRM_Y_CK#
1 D-GND
5 5V_CRUM
4 5V_CRUM
3 5V_CRUM
1 5V_CRUM
2 5V_CRUM
6 5V_CRUM
DF11-6DP-SP1
5 D-GND
4 D-GND
3 D-GND
1 D-GND
2 D-GND
6 D-GND
DF11-6DP-SP1

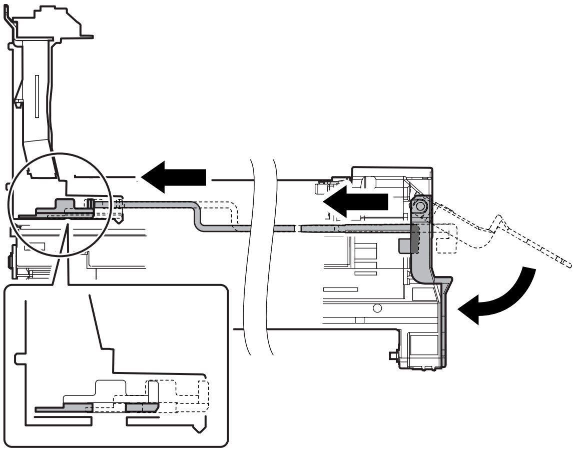
Signal name	Name	Function/Operation
TNM	Toner motor (Y, M, C, K)	Toner supply motor to the develping unit
CRUM	CRUM (Y,M,C,K)	Data memory for the toner cartridge

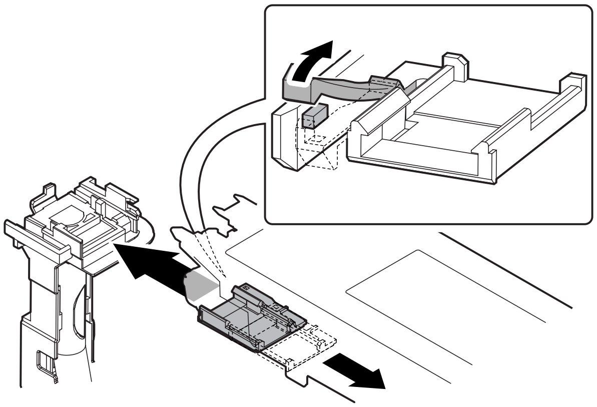
No.	Name	Function/Operation
1	Toner transport pipe	Toner supply pipe from the toner cartridge to the developing unit

2. Operational descriptions

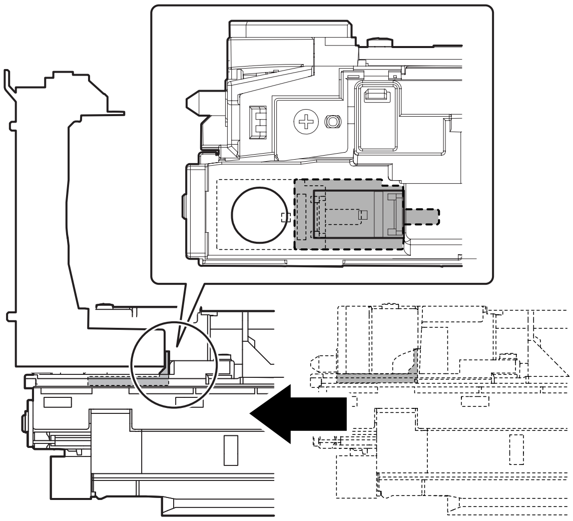
When the toner cartridge is inserted to the machine, the lock pawl is disengaged and the supply shutter is opened.

The transport pipe shutter is opened and closed by the shaft which is linked with the developing lever.





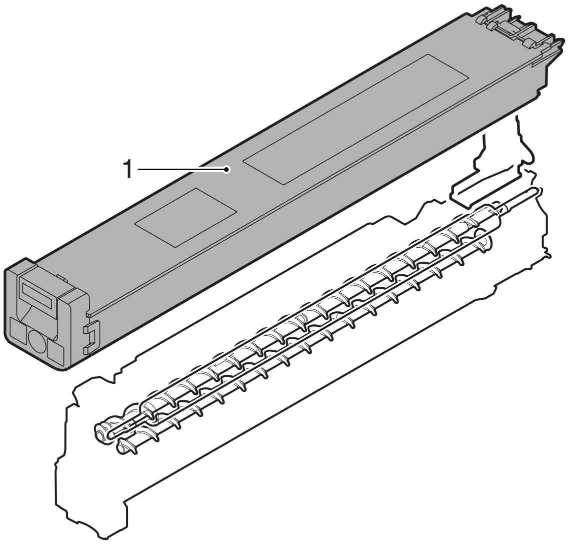
The toner supply section of the developing unit is opened and closed when the open/close lever on the unit hits the block on the machine.



3. Maintenance

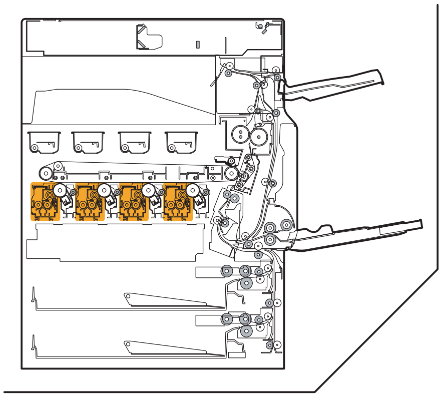
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shif the position.

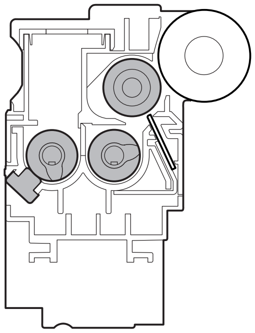
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark: Refer to the Parts Guide. Block/ Item No. (Only the replacement parts are described.)
		Color supply			60 K		120 K		180 K		240 K		300 K		360 K	
1	Toner cartridge (BK/C/M/Y)	Monochrome, color supply	User replacement for every toner empty (or the specified traveling distance).													Replace after 2 years of use.

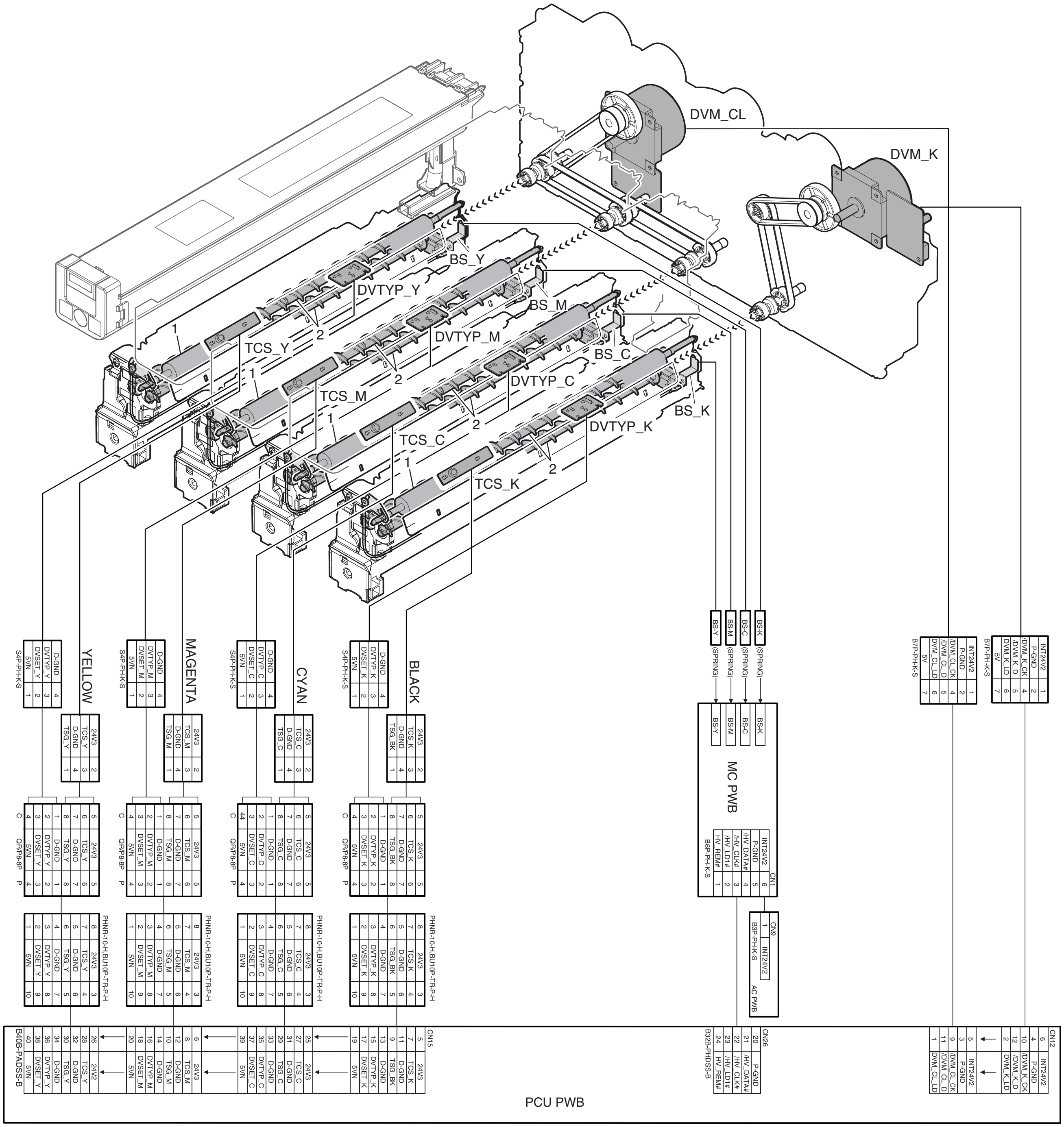


[K] DEVELOPING SECTION

1. Electrical and mechanism relation diagram





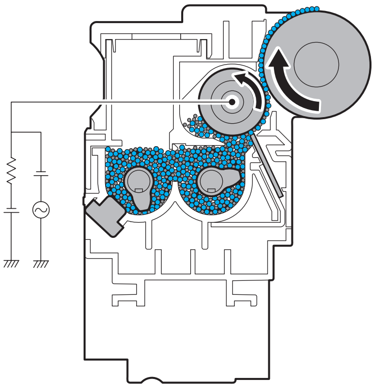

DVM_CL
DVM_K
BS_Y
BS_M
BS_C
BS_K
DVTYP_Y
DVTYP_M
DVTYP_C
DVTYP_K
TCS_Y
TCS_M
TCS_C
TCS_K
1
2
YELLOW
MAGENTA
CYAN
BLACK
S4P-PH-K-S
QR/P8-8P
PHNR-10-H-BU10P-TR-P-H
BS-Y (SPRING)
BS-M (SPRING)
BS-C (SPRING)
BS-K (SPRING)
MC PWB
CN1
B6P-PH-K-S
CN9
B3P-PH-K-S
AC PWB
B7P-PH-K-S
CN15
B40B-PADSS-B
CN26
B32B-PHDSS-B
CN12
PCU PWB

Signal name	Name	Function/Operation
DVM_CL	Developer motor (color)	Color developing unit drive
DVM_K	Developer motor (black)	Black developing unit drive
BS	Developer bias (Y, M, C, K)	Developer bias
TCS	Toner density sensor (Y, M, C, K)	Controls the toner density in the developing unit.
DVTYP	DV initial detection PWB (Y, M, C, K)	Detection of a new developing unit (machine exclusive for CRU)

No.	Name	Function/Operation
1	Developer roller	Latent electrostatic images on the OPC drum are changed to visible images.
2	Stirring roller	Stirring developer
3	Toner filter	Prevents dispersing of toner.

2. Operational descriptions

Electrostatic latent images generated on the OPC drum by the laser (writing) units (laser image ray) are converted into visible images by toner.



Toner and carrier in the developing unit are agitated and transported by the mixing roller.

By mixing and transporting, toner and carrier are negatively charged due to mechanical friction.

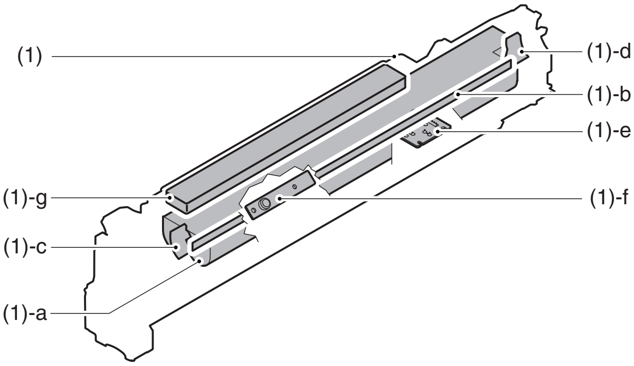
The developing bias voltage (AC component and negative DC component) is applied to the developing roller.

Negatively charged toner is attracted to the exposed section on the OPC drum where the negative potential falls due to the developing bias.

If the OPC drum is not exposed, the negative potential is higher than the developing bias voltage, and toner is not attracted.

3. Disassembly and assembly

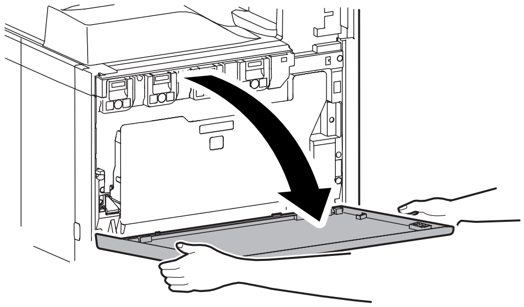
A. Developing section



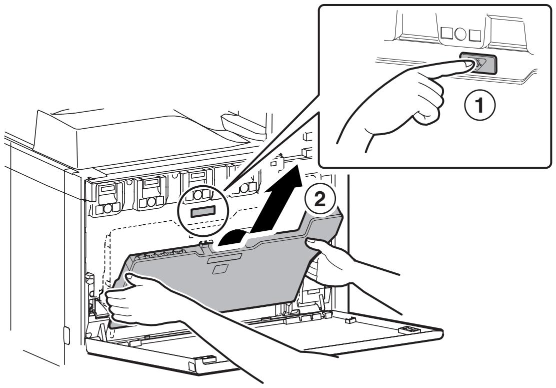
Unit		Parts		Maintenance
(1)	Developing unit	a	Developer	▲
		b	DV seal	▲
		c	DV side seal F	▲
		d	DV side seal R	▲
		e	DV initial PWB	
		f	Density sensor	
		g	Toner filter	▲

(1) Developing unit

1) Open the front cabinet.



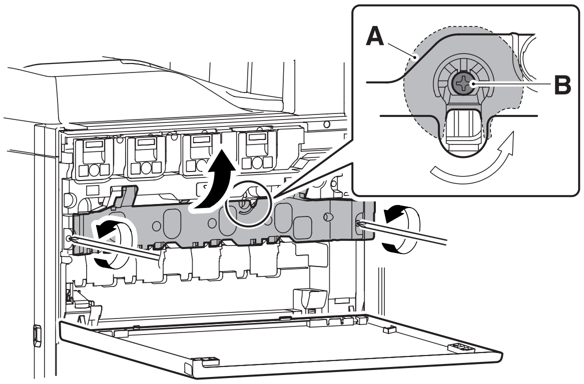
2) Remove the waste toner bottle unit.



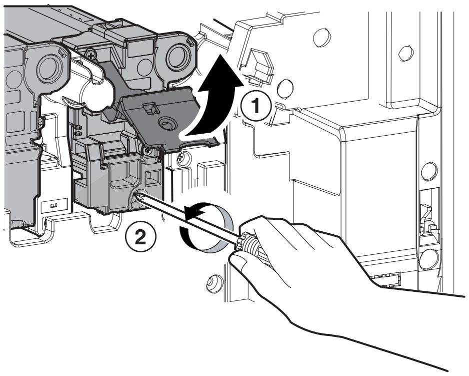
3) Check that the lock is released as shown in (A).

Loosen the blue screw, and open the drum positioning unit.

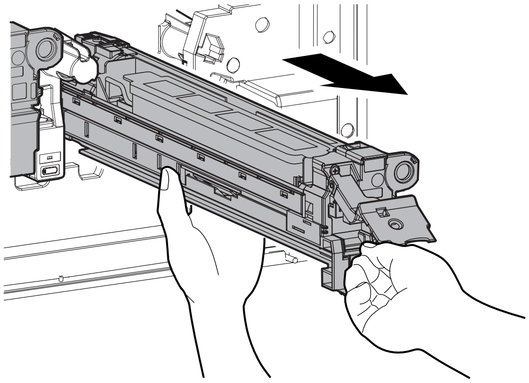
* When the lock is not released, use a screwdriver to turn the screw (B) counterclockwise so that it is fit as (A).



4) Open the DV lock lever, and release the fixing screw. (1 position for each color)



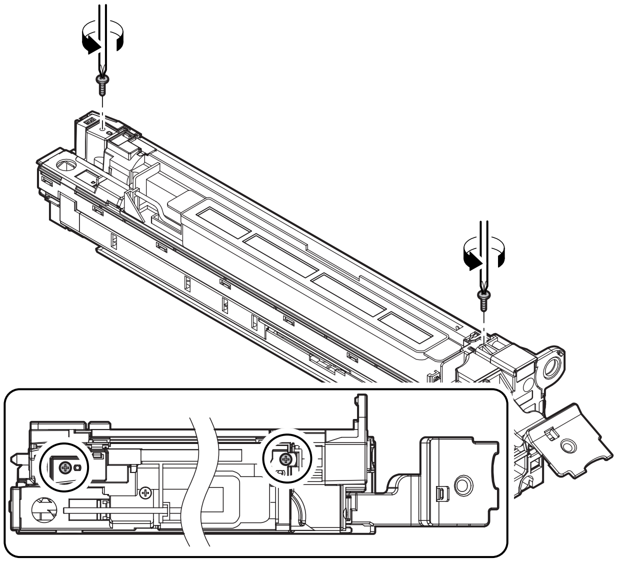
5) Pinch the knob and remove the development unit.



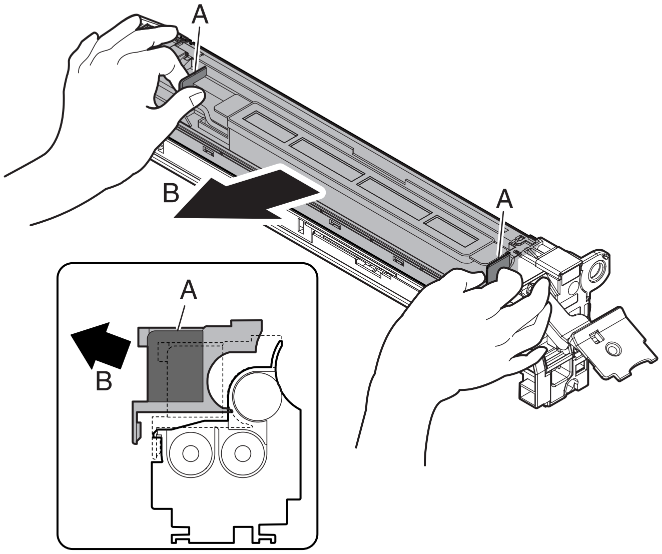
a. Developer

1) Remove the developing unit.

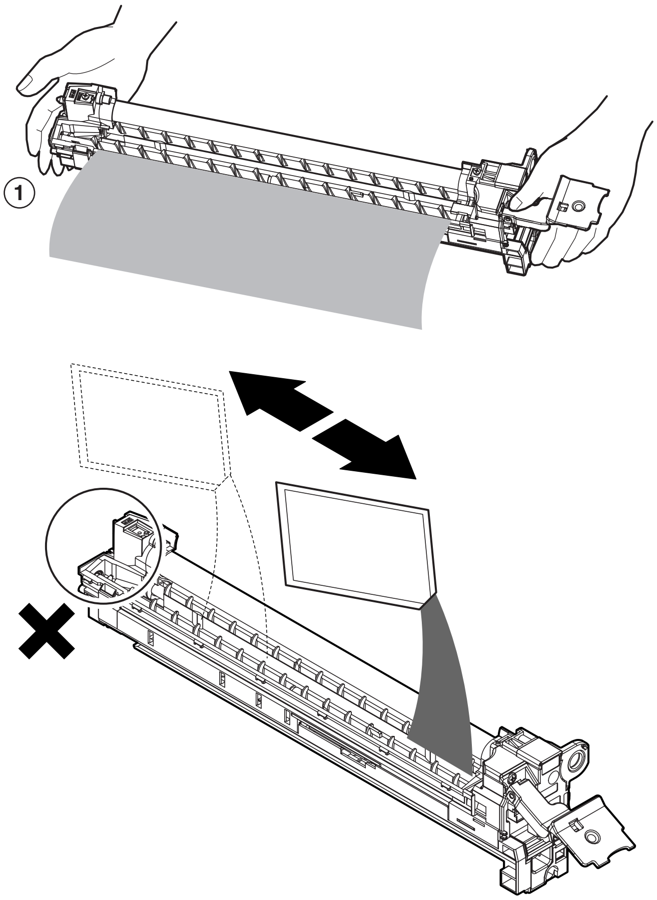
2) Remove two fixing screws of the DV cover.



3) Hold the sections A, and remove the DV cover in the arrow direction (B).



4) Take out the old developer, and insert the new developer.



* When replacing developer, use an extreme care not to drop developer on the drive section (marked with ○).

(Note for cleaning the developing unit)

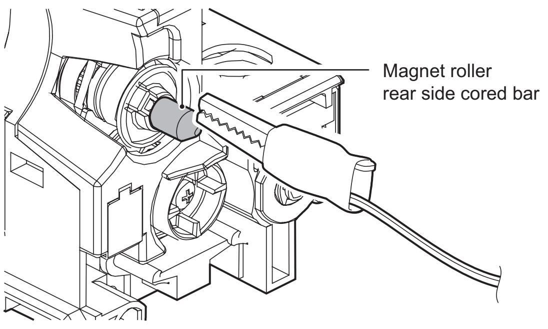
If the developing unit is cleaned with a cleaner or an air blower with much developer in the developing unit, static electricity may be accumulated in the unit. In order to prevent against this, note the following items.

* If metal part is brought into contact with the magnet roller surface when transporting developer or removing foreign material from the magnet roller, developer may adhere to the magnet roller surface. Be careful to avoid this when handling the magnet roller.

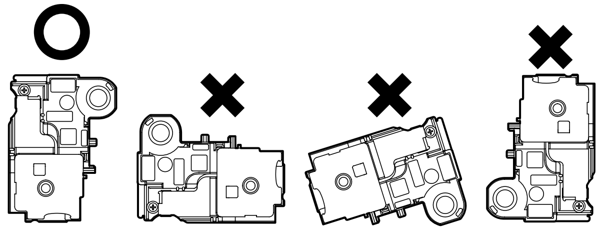
* Remove developer in the developer unit as well as developer attached to the magnet roller as far as possible.

(When cleaning the developing unit with an air blower [duct])

* Before cleaning with an air duct, remove developer from the unit as far as possible, and ground the magnet roller rear side cored bar as shown in the figure below and clean the unit with an air blower. (Do not pinch the grounding wire with a crocodile clip connector in order to prevent against damage on the cored bar.)



* When supplying developer, do not tilt the developing unit.

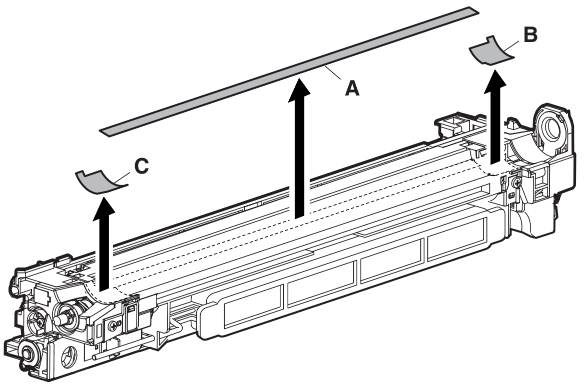


b. DV seal

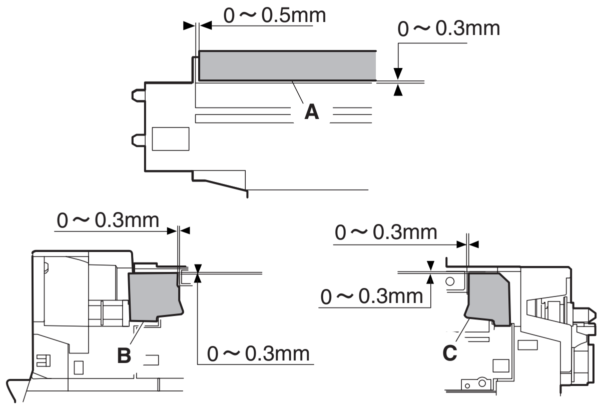
c. DV side seal F

d. DV side seal R

1) Remove the old DV seal (A), DV side seal F (B), R (C).



2) Attach the new DV seal, DV side seal F (B), DV side seal R (C) to the reference position.

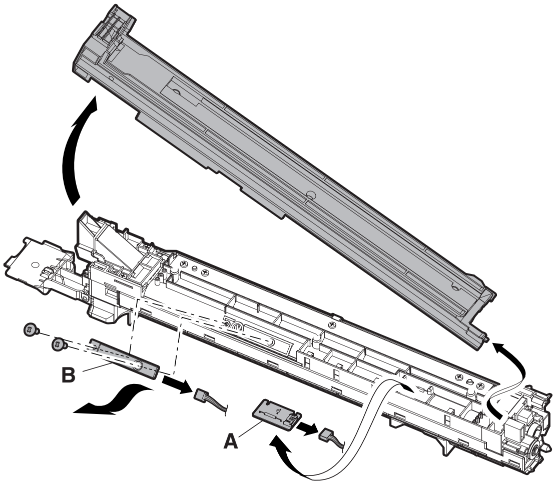


e. DV initial PWB

f. Density sensor

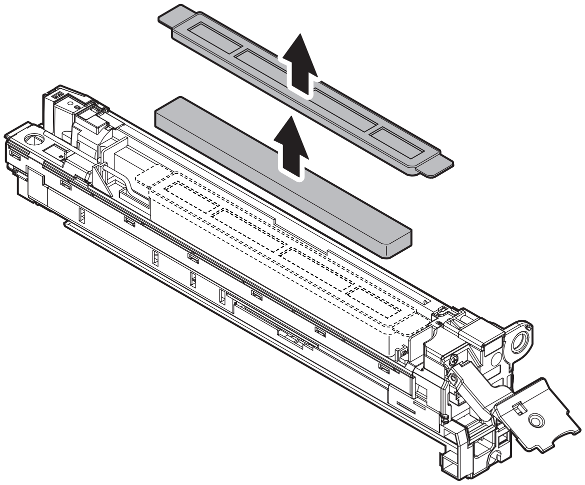
1) Remove the developing unit.
2) Remove the screw, and remove the DV guide. Disconnect the connector, and remove the DV initial PWB (A).

   Remove the screw, and diisconnect the connector, and remove the density sensor (B).



g. Toner filter

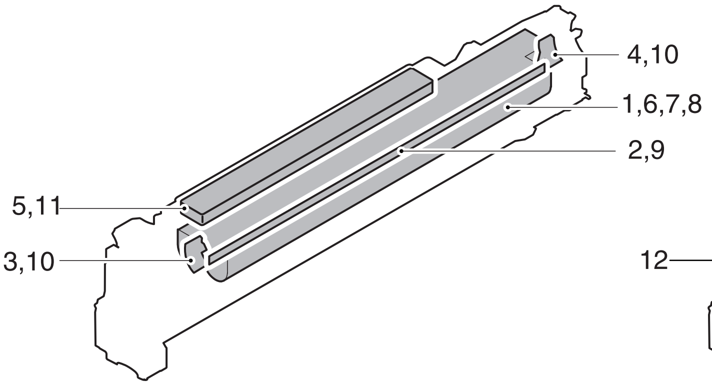
1) Remove the developing unit.
2) Remove the toner filter cover and the toner filter.

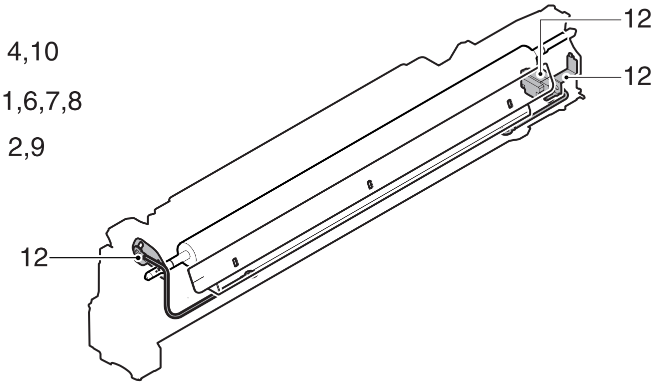


4. Maintenance

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

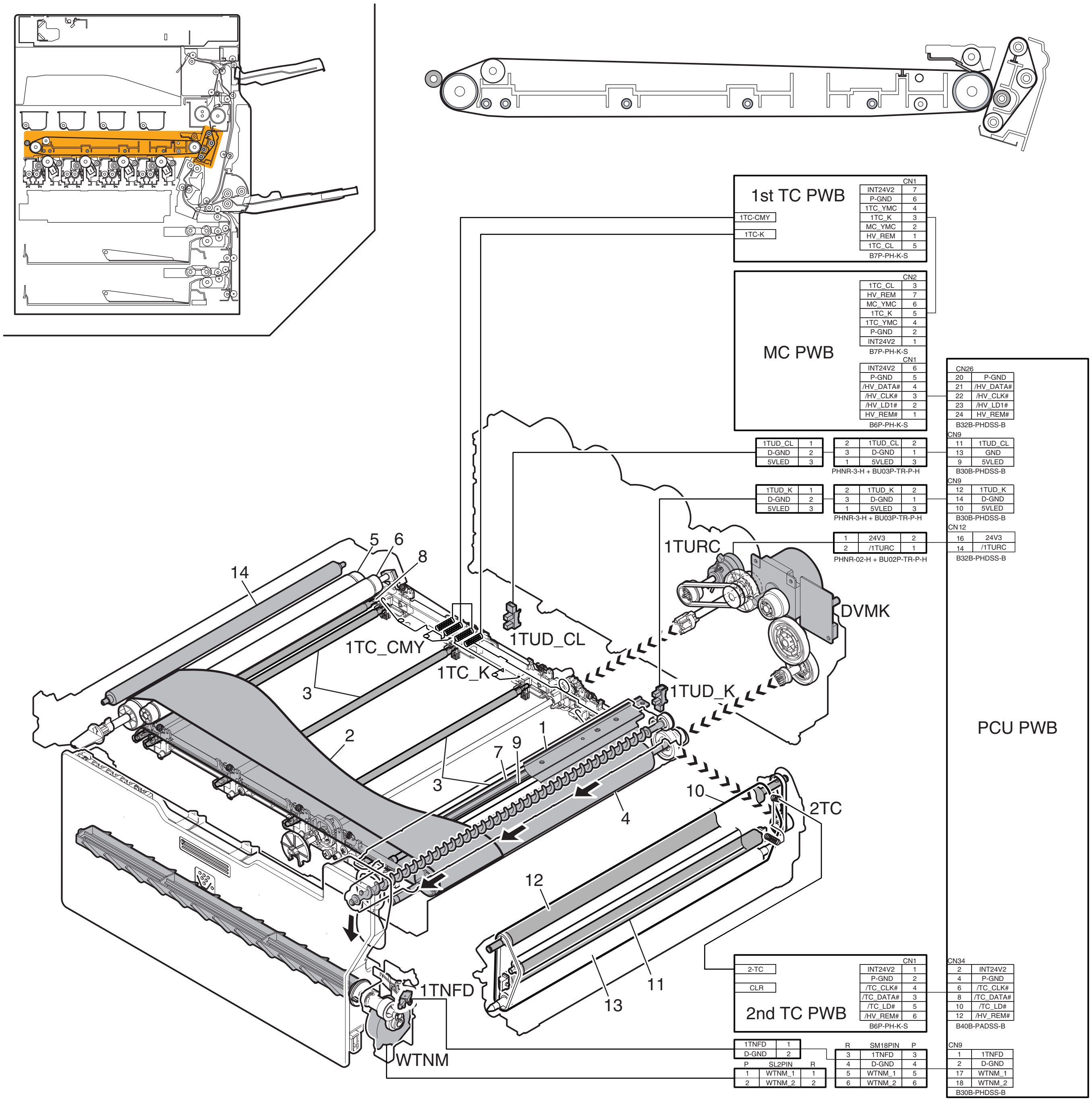
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark: Refer to the Parts Guide. Block/ Item No. (Only the replacement parts are described.)
		Color supply			60 K		120 K		180 K		240 K		300 K		360 K	
1	Developer (BK)	Monochrome supply		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
2	DV seal (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-42)
3	DV side seal F (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-26)
4	DV side seal R (BK)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [23]-15)
5	Toner filter			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [22]-37)
6	Developer (C)	Color supply			▲		▲		▲		▲		▲		▲	
7	Developer (M)				▲		▲		▲		▲		▲		▲	
8	Developer (Y)				▲		▲		▲		▲		▲		▲	
9	DV seal (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [23]-42)
10	DV side sheal F, R (C)				▲		▲		▲		▲		▲		▲	(P/G No.: [23]-26, [23]-15)
11	Toner filter				▲		▲		▲		▲		▲		▲	(P/G No.: [22]-37)
12	Bias pin/ Connector	Mechanism parts	×	×	×	×	×	×	×	×	×	×	×	×	×	





[L] TRANSFER SECTION

1. Electrical and mechanism relation diagram


1st TC PWB
1TC-CMY
1TC-K
CN1
INT24V2 7
P-GND 6
1TC_YMC 4
1TC_K 3
MC_YMC 2
HV_REM 1
1TC_CL 5
B7P-PH-K-S
MC PWB
CN2
1TC_CL 3
HV_REM 7
MC_YMC 6
1TC_K 5
1TC_YMC 4
P-GND 2
INT24V2 1
B7P-PH-K-S
CN1
INT24V2 6
P-GND 5
/HV_DATA# 4
/HV_CLK# 3
/HV_LD1# 2
HV_REM# 1
B6P-PH-K-S
CN26
20 P-GND
21 /HV_DATA#
22 /HV_CLK#
23 /HV_LD1#
24 HV_REM#
B32B-PHDSS-B
1TUD_CL 1
D-GND 2
5VLED 3
2 1TUD_CL 2
3 D-GND 1
1 5VLED 3
PHNR-3-H + BU03P-TR-P-H
CN9
11 1TUD_CL
13 GND
9 5VLED
B30B-PHDSS-B
1TUD_K 1
D-GND 2
5VLED 3
2 1TUD_K 2
3 D-GND 1
1 5VLED 3
PHNR-3-H + BU03P-TR-P-H
CN9
12 1TUD_K
14 D-GND
10 5VLED
B30B-PHDSS-B
1 24V3 2
2 /1TURC 1
PHNR-02-H + BU02P-TR-P-H
CN12
16 24V3
14 /1TURC
B32B-PHDSS-B
PCU PWB
1TURC
DVMK
1TUD_CL
1TUD_K
1TC_CMY
1TC_K
2TC
1TNFD
WTNM
1
2
3
4
5
6
7
8
9
10
11
12
13
14
2nd TC PWB
2-TC
CLR
CN1
INT24V2 1
P-GND 2
/TC_CLK# 4
/TC_DATA# 3
/TC_LD# 5
/HV_REM# 6
B6P-PH-K-S
CN34
2 INT24V2
4 P-GND
6 /TC_CLK#
8 /TC_DATA#
10 /TC_LD#
12 /HV_REM#
B40B-PADSS-B
1TNFD 1
D-GND 2
P SL2PIN R
1 WTNM_1 1
2 WTNM_2 2
R SM18PIN P
3 1TNFD 3
4 D-GND 4
5 WTNM_1 5
6 WTNM_2 6
CN9
1 1TNFD
2 D-GND
17 WTNM_1
18 WTNM_2
B30B-PHDSS-B

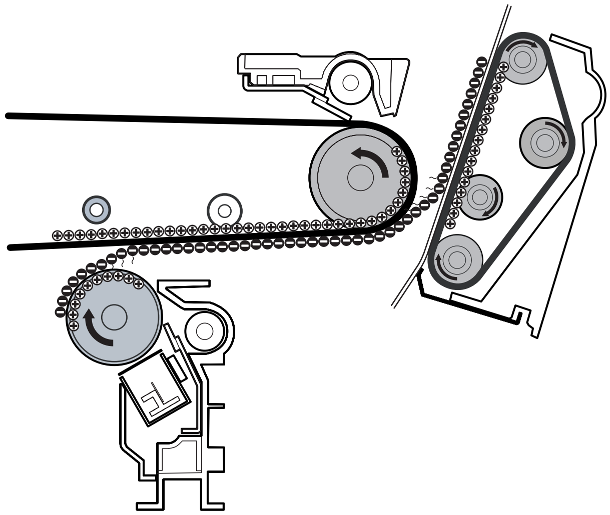
Signal name	Name	Functions and operations
1TC_CMY		Color trasnfer high voltage signal
1TC_K		B/W transfer high voltage signal
1TNFD	Waste toner full detection switch	Waste toner full detection
1TUD_CL	Transfer belt separation CL detection	Color transfer roller position detection signal
1TUD_K	Transfer belt separation BK detection	B/W transfer roller position detection signal
1TURC	Primary transfer separation clutch	Transfer roller separation control clutch
2TC		Secondary transfer high voltage signal
DVMK	Developer drive motor (K)	Transfer unit drive motor (Used together with the B/W developing drive roller)
WTNM	Waste toner drive motor	Stirs waste toner.

No.	Name	Functions and operations
1	Intermediate transfer blade	Cleans residual toner on the intermediate transfer belt.
2	Intermediate transfer belt	Transfers toner on the OPC drum to form toner images on the belt.
3	Primary transfer roller	Transfers toner images on the OPC drum to the intermediate transfer belt.
4	Transfer drive roller	Drives the transfer belt.
5	Transfer follower roller	Transfer belt follower drive
6	Tension roller	Applies a tension to the transfer belt.
7	Roller cleaning brush	Cleans the back surface of the transfer belt.
8	Y auxiliary roller	Retaining the belt position by separation of the Y transfer roller
9	Registration backup roller	Retaining the belt position in the process control and the registration section.
10	Secondary transfer belt	Transfers toner images on the intermediate transfer belt to paper.
11	Secondary transfer roller	Transfers toner images on the intermediate transfer belt to paper.
12	Secondary belt transfer roller	Drives the transfer belt.
13	Secondary belt tension roller	Applies a proper tension to the transfer belt.
14	Primary transfer CL roller	Cleans the primary transfer belt.

2. Operational descriptions

A. Outline

In this section, a high voltage is applied to transfer images to the intermediate transfer belt and toner images on the intermediate transfer belt are transferred to paper by the secondary transfer belt.

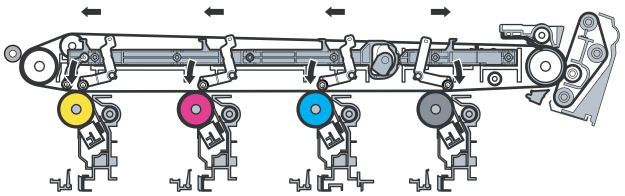


B. Primary (intermediate) transfer roller separation mechanism and content

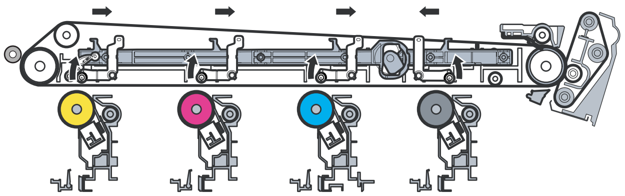
The primary transfer roller performs all pressure contact, all separation, and only black contact depending on the operation mode.

When the roller separation clutch (1TURC) is turned ON, the transfer cam rotates and the primary transfer link and the primary transfer arm which is linked with the cam are shifted in the arrow direction, performing separation of the roller.

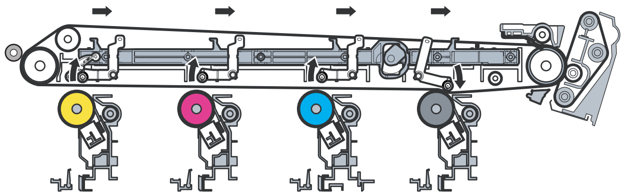
All pressure contact



All separation



Only black pressure contact



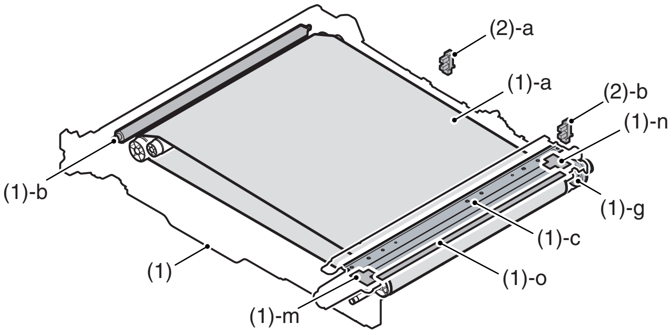
The arm performs all pressure contact, all separation, and only black contact.

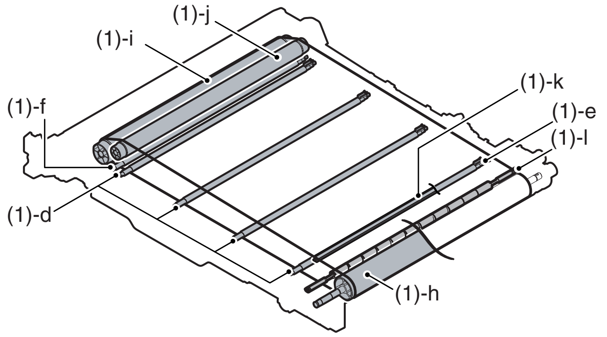
	1TUD_CL	1TUD_K
All pressure contact	ON	OFF
All separation	OFF	ON
Only black contact	OFF	OFF

The primary transfer and the secondary transfer are driven together with the black developing motor.

3. Disassembly and assembly

A. Primary transfer

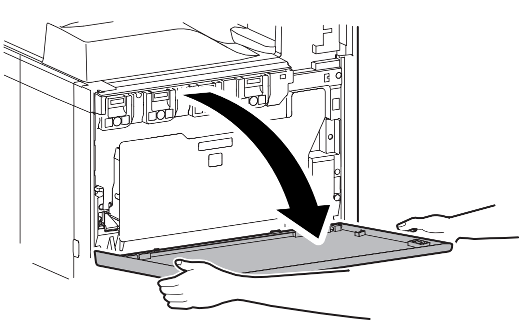




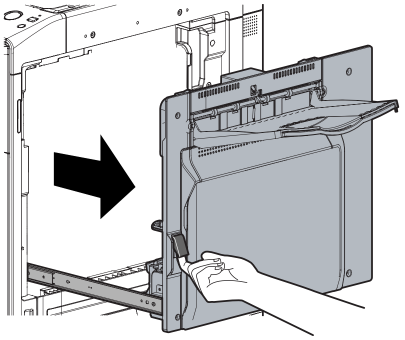
Unit		Parts		Maintenance
(1)	Primary transfer unit	a	Intermediate transfer belt	× ▲
		b	Primary transfer CL roller	▲
		c	Intermediate transfer blade	× ▲
		d	Primary transfer roller	× ▲
		e	Primary transfer conduction collar	× ▲
		f	Y auxiliary roller	○
		g	Belt drive gear	× ▲
		h	Transfer drive roller	○
		i	Transfer follower roller	○
		j	Tension roller	○
		k	Roller cleaning brush	×
		l	Registration backup roller	×
		m	Cleaner seal	×
		n	Cleaner seal R	×
		o	Transfer toner reception seal	×
(2)	Others	a	Transfer belt separation CL detection	
		b	Transfer belt separation BK detection	

(1) Primary transfer unit

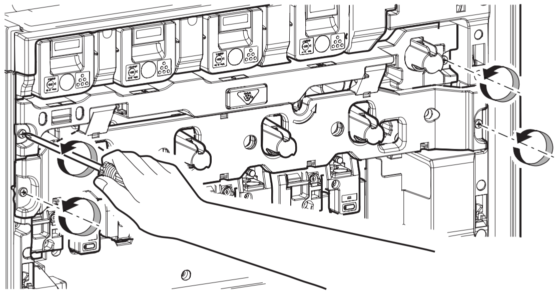
1) Open the front cover.



2) Open the right door unit.

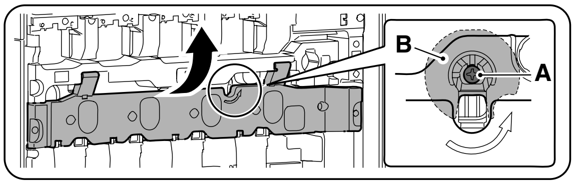


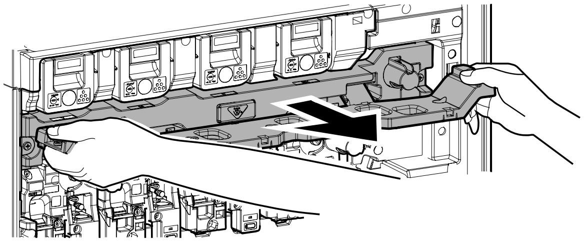
3) Loosen the blue screw.



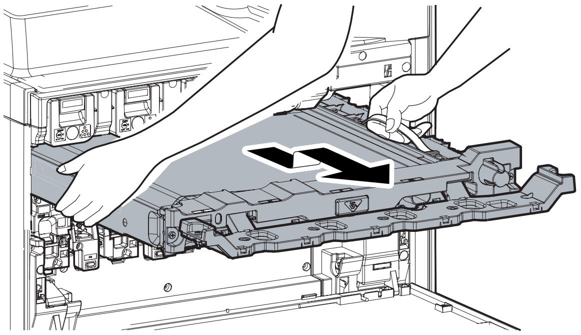
4) Turn the blue screw (A) counterclockwise. Making sure that the lock is released (B), open and then pull out the drum positioning unit.

   * Failure to complete this step may damage the intermediate transfer belt.





5) Hold the specified position, and remove the primary transfer unit.



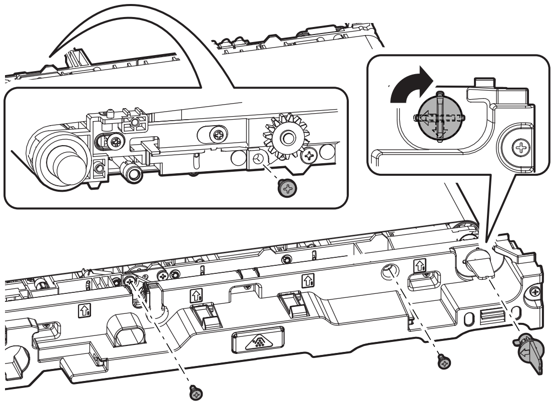
(NOTE)
When the transfer belt tension of the primary transfer unit is released manually, turn on the power again after completion of the work. (Power OFF-ON) This procedure initializes the transfer roller to return it to the home position.

a. Intermediate transfer belt

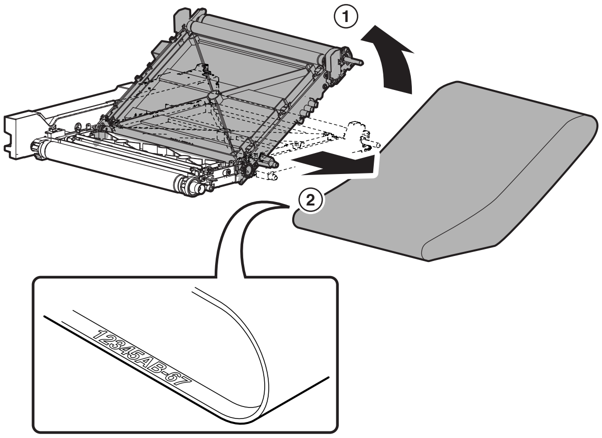
* Do not replace the belt, blade, and primary transfer CL roller separately. When any of the three parts needs to be replaced, replace the other two parts as well.

* When replacing the belt, be sure to apply stearic acid (UKOG-0312FCZZ) and strontium titanate according to the instructions.

1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the transfer guide plate left unit.
4) Remove the parts.



5) Fold the CL section of the transfer frame and remove the intermediate transfer belt.



* When installing, set the lot number inside the belt to the front side.

[Precautions for installation]

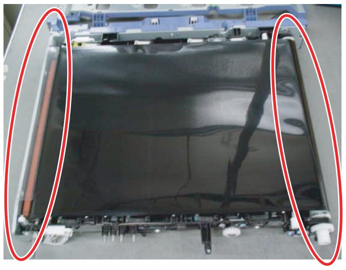
When replacing the belt, make sure not to scratch or fold it.

Do not touch the surface of the belt with bare hands.

(Applying the start powder)

1) Install the primary transfer unit, laying it on the top surface.
    - * Make sure that the pressure on the CL roller has been released.
2) Apply the side seal powder (stearic acid) uniformly on the surface of the belt (Figure 1).
    - * Apply the side seal powder uniformly on half of the surfaces on both sides of the belt.
    - * Rub the belt with a cloth bag containing the side seal powder so that the powder will be applied onto the belt.
3) Turn the belt a 1/4 turn. (For the direction of the turn, see Figure 3.)
4) Apply strontium titanate uniformly on the surface of the belt.
    - * Apply strontium titanate evenly on the surface of the belt.
    - * Apply 20 times (5 times transversally x 4 times longitudinally, see Figure 2).
5) Turn the belt twice (in the direction described in step 3).
    - * There may be some traces of strontium titanate left on the surface of the belt.
6) Turn the primary transfer unit over.
    - * Turn the unit over by lifting the cleaner unit side.
    - * Keep the primary transfer unit in a horizontal position (not to lower the cleaner unit side) until it is installed on the machine.
    - * Be sure not to allow strontium titanate to spread inside the cleaner unit.

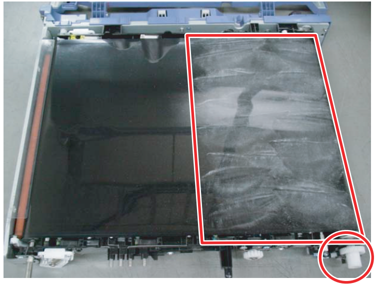
[Bottom surface]



CL roller side

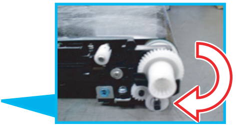
Cleaner unit side

[Figure 1]

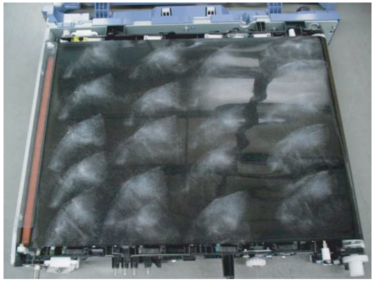


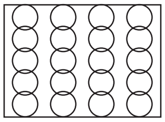
Apply strontium titanate all the way beyond the boss.

[Figure 3]

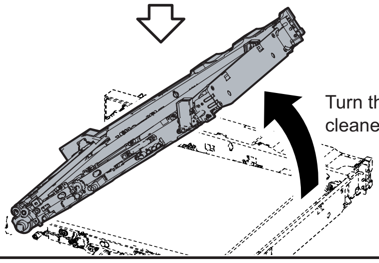


[Figure 2]

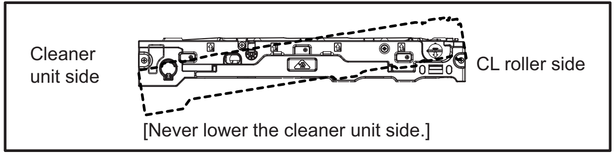




[Number of times of application]
Apply uniformly.



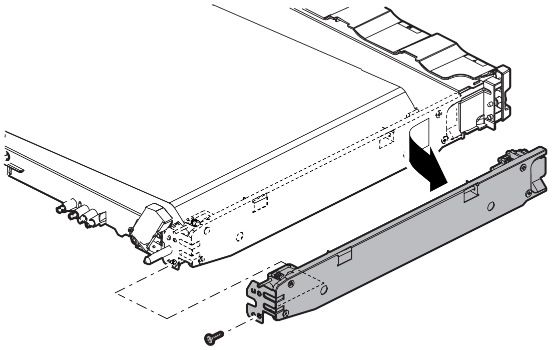
Turn the unit over by lifting the cleaner unit side.



[Never lower the cleaner unit side.]

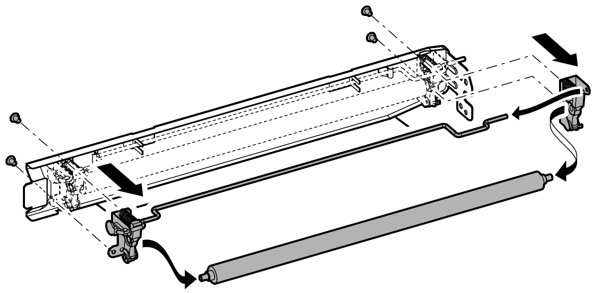
b. Primary transfer CL roller

1) Remove the primary transfer unit.
2) Remove the transfer guide plate left unit.

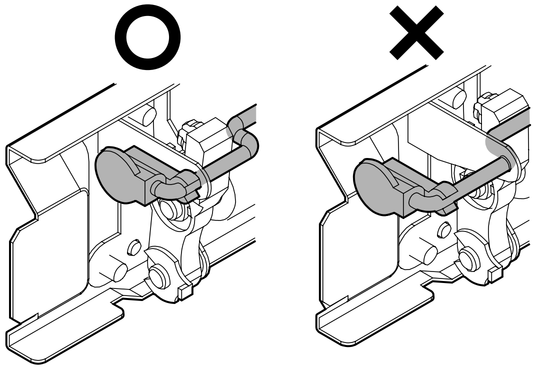


3) Remove the screw, and remove the primary transfer CL roller installation plate unit.

   Remove the waste toner drive motor from the waste toner drive unit.

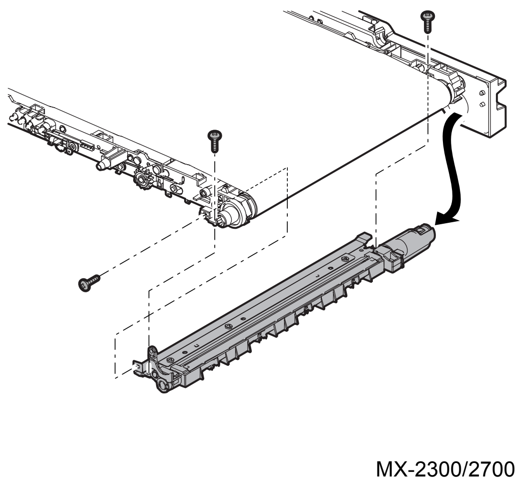


* After assembling, check to confirm that it is not set at the pressure release position.



c. Intermediate transfer blade

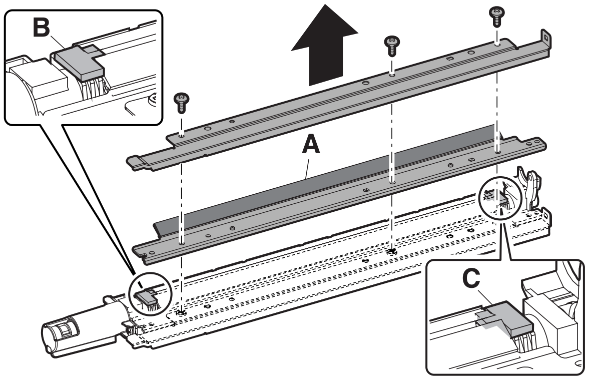
1) Remove the primary transfer unit, and put it upside down.
2) Remove the cleaner unit.



3) Remove the transfer guide plate, and remove the intermediate transfer blade.

   * When installing, apply stearic acid onto the intermediate transfer blade (A).

   * Check the cleaner seal (B) and cleaner seal R (C). If any of them is laid on the blade, replace it. (See step m for the cleaner seal and step n for the cleaner seal R respectively.)

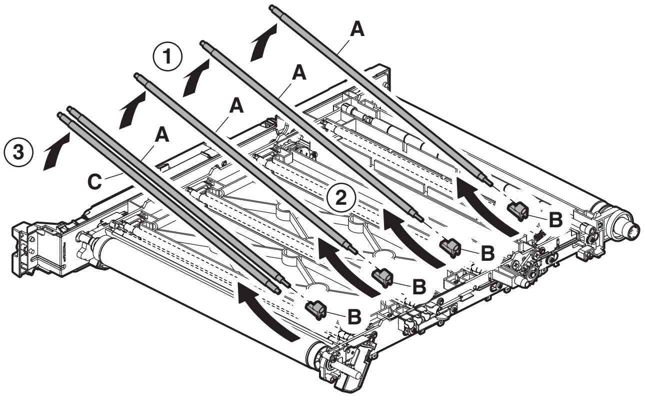


d. Primary transfer roller

e. Primary transfer conduction collar

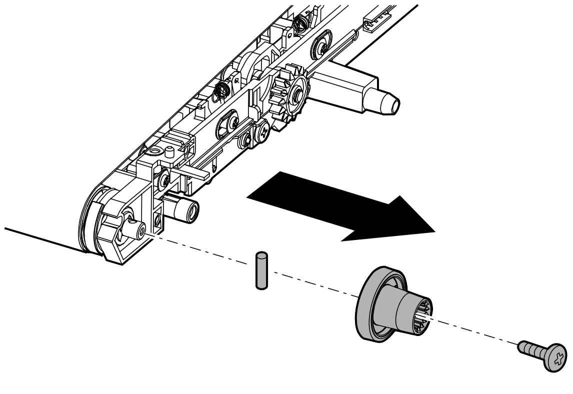
f. Y auxiliary roller

1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the intermediate transfer belt.
4) Disengage the engagement on the front side, and remove the primary transfer roller (A) and the primary transfer conduction collar (B). Remove the Y auxiliary roller (C).



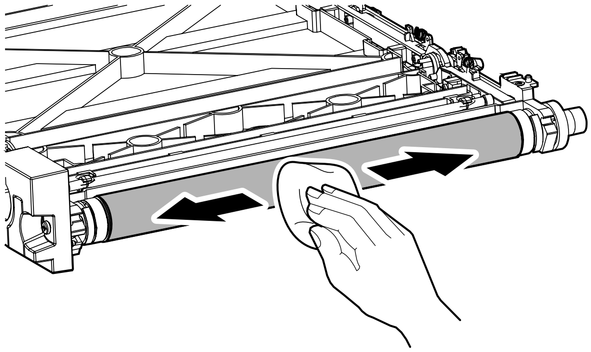
g. Belt drive gear

1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the screws, and remove the belt drive gear.



h. Transfer drive roller

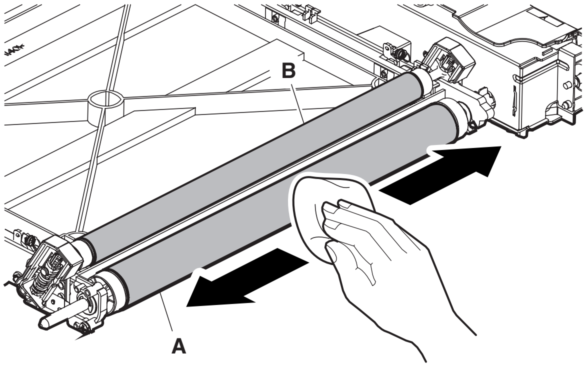
1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the intermediate transfer belt.
4) Clean the transfer drive roller.



i. Transfer follower roller

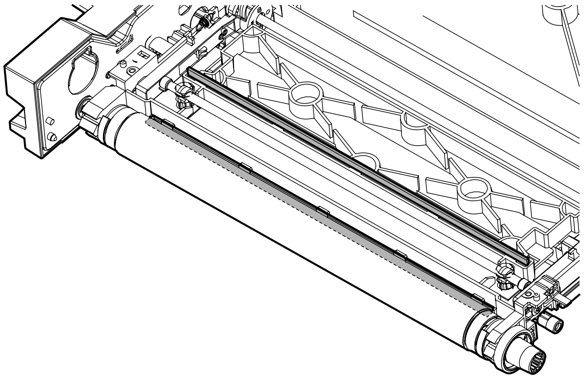
j. Tension roller

1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the intermediate transfer belt.
4) Clean the trasnfer follower roller (A) and the tension roller (B).



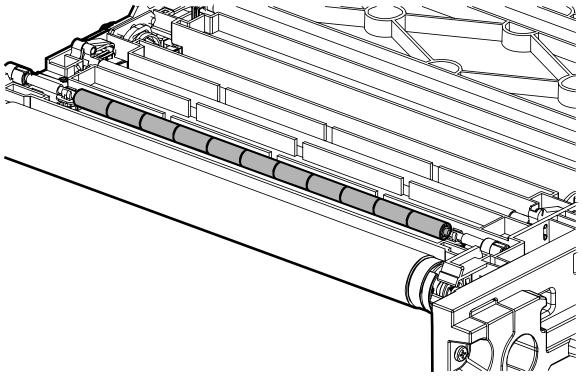
k. Roller cleaning brush

1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the intermediate transfer belt.
4) Check the roller CL brush.



l. Registration backup roller

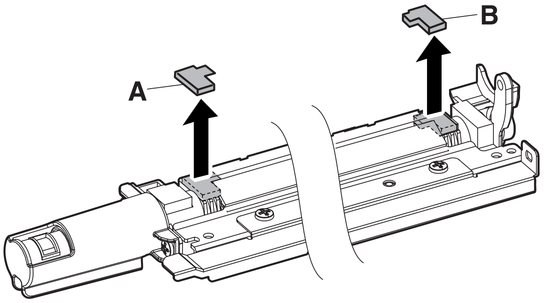
1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the intermediate transfer belt.
4) Check the registration backup roller.



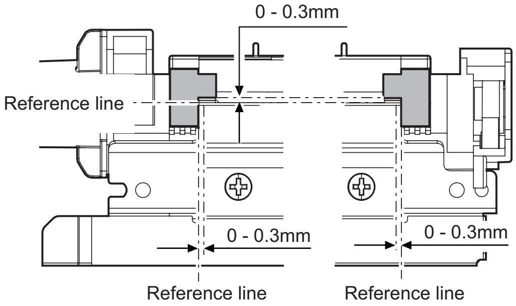
m. Cleaner seal

n. Cleaner seal R

1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the cleaner seal (A) and the cleaner seal R (B).

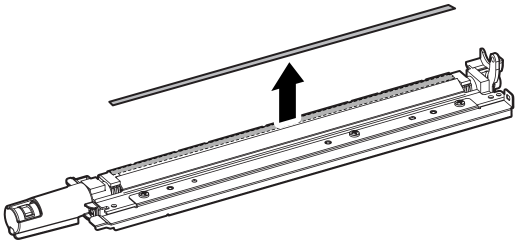


* When attaching the seals, position the seals within the specified ranges, referring to the reference lines as indicated below.

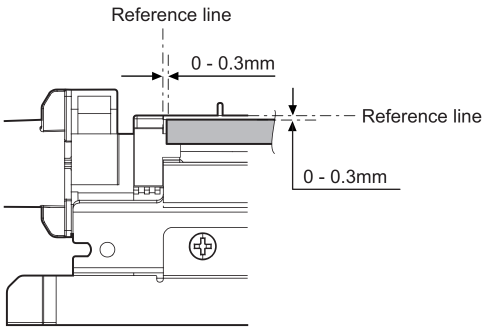


o. Transfer toner reception seal

1) Remove the primary trasnfer unit.
2) Remove the cleaner unit.
3) Remove the transfer toner reception seal.



* When attaching the transfer toner reception seal, position the seal within the specified ranges, referring to the reference lines as indicated below.

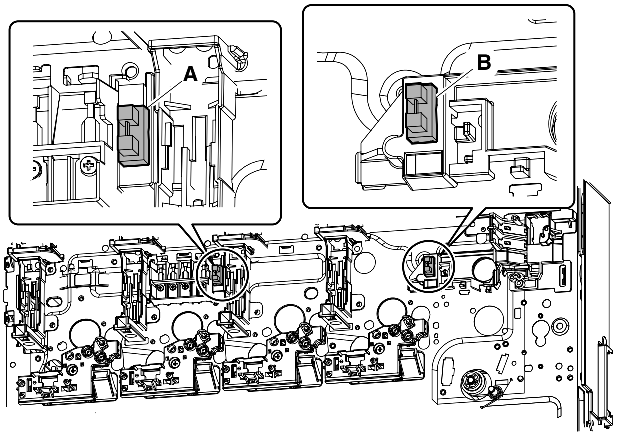


(2) Others

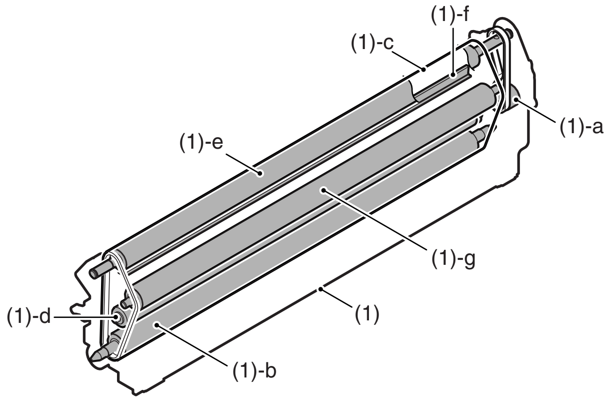
a. Transfer belt separation CL detection

b. Transfer belt separation BK detection

1) Remove the primary trasnfer unit.
2) Remove the developing unit.
3) Remove the drum unit.
4) Check the transfer belt separation CL detection (A) and the transfer belt separation BK detection (B).



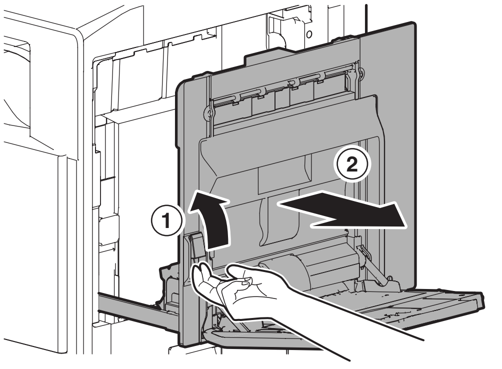
B. Secondary transfer



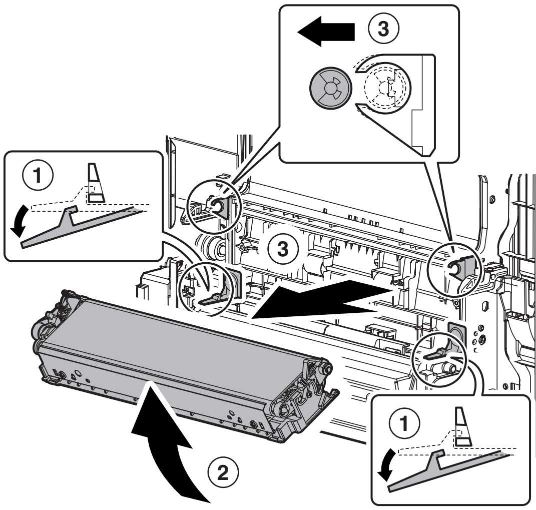
Unit		Parts		Maintenance
(1)	Secondary transfer unit	a	Secondary transfer idle gear	×▲
		b	Secondary belt follower roller	×○
		c	Secondary transfer belt	×▲
		d	Secondary transfer roller	×▲
		e	Secondary trasnfer belt drive roller	×○
		f	Roller cleaning brush	×
		g	Secondary belt tension roller	×○

(1) Secondary transfer unit

1) Open the right door unit.



2) Release the pawl, and remove the secondary transfer unit.

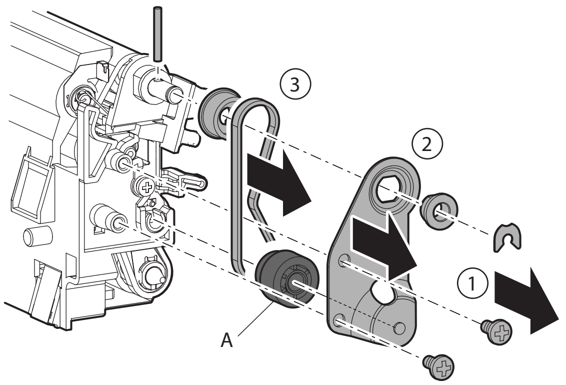


a. Secondary trasnfer idle gear

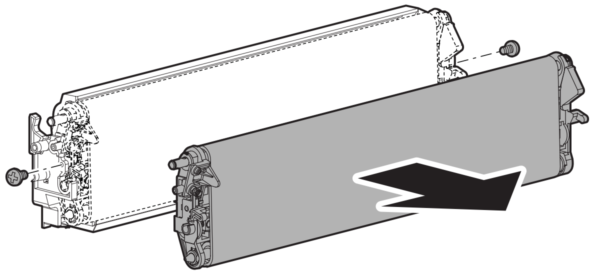
b. Secondary belt follower roller

c. Secondary transfer belt

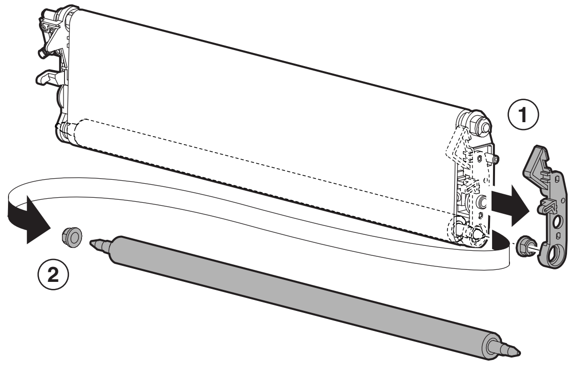
1) Remove the secondary trasnfer unit.
2) Remove each parts, and remove the secondary drive plate.
   Remove each parts, and remove the idle gear (A).



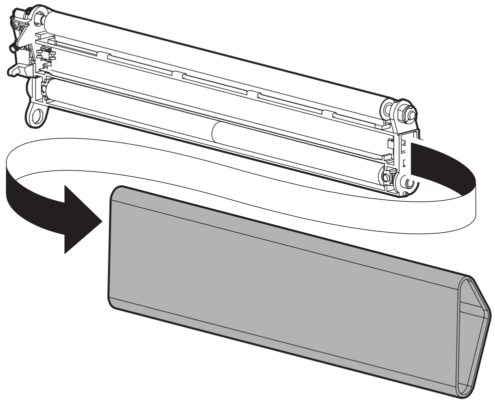
3) Remove the secondary belt transfer frame.



4) Remove each parts, and remove the secondary follower roller.

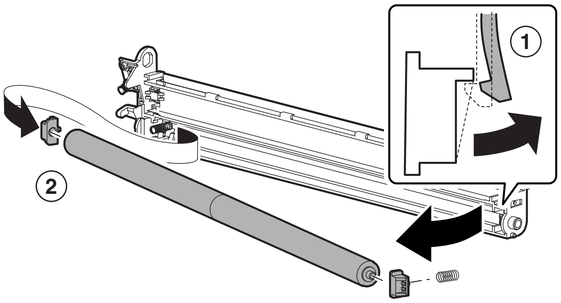


5) Remove the secondary transfer belt.



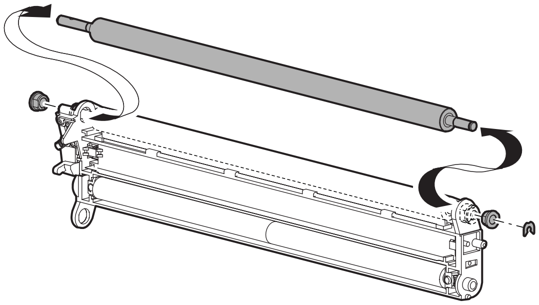
d. Secondary transfer roller

1) Remove the secondary trasnfer unit.
2) Remove the secondary transfer belt.
3) Remove the bearing on the front side, and remove the secondary transfer roller.



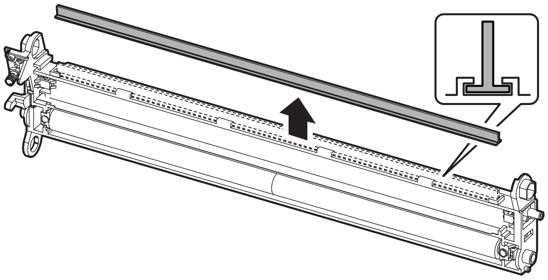
e. Secondary belt drive roller

1) Remove the secondary trasnfer unit.
2) Remove the secondary transfer belt.
3) Remove each parts, then remove the secondary belt drive roller.



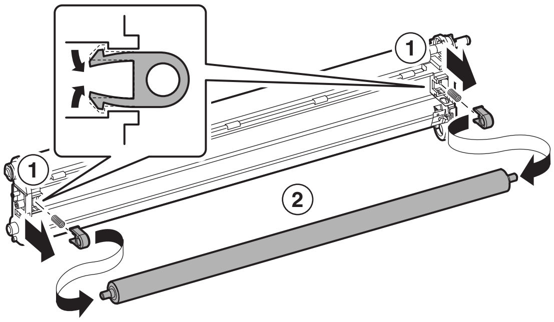
f. Roller cleaning brush

1) Remove the secondary trasnfer unit.
2) Remove the secondary transfer belt.
3) Remove the secondary belt drive roller.
4) Remove the roller CL brush.



g. Secondary belt tension roller

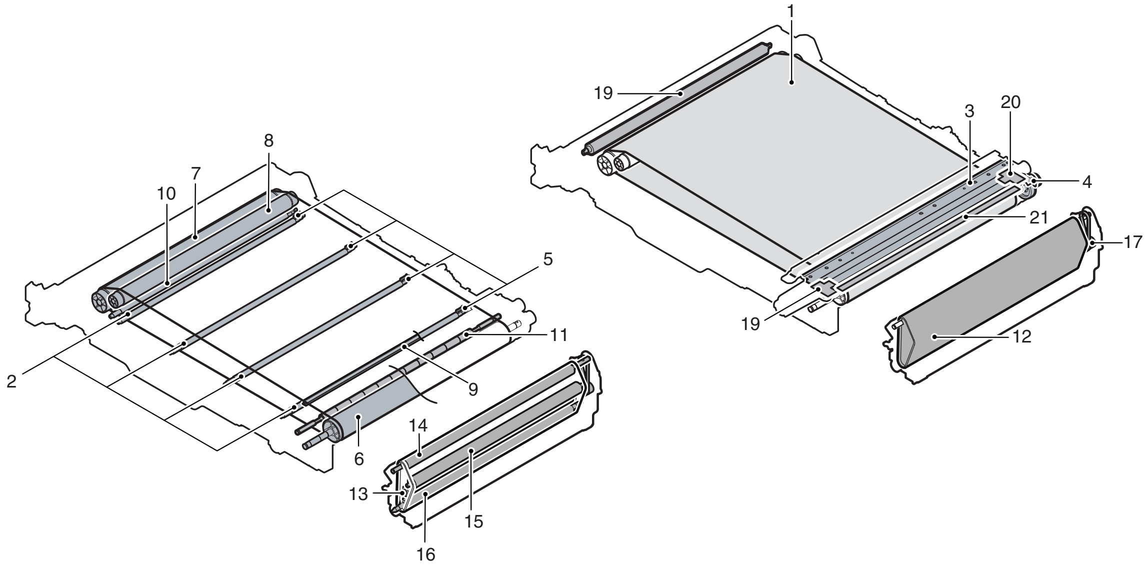
1) Remove the secondary transfer belt.
2) Release the pawl, and remove the secondary belt tension roller.

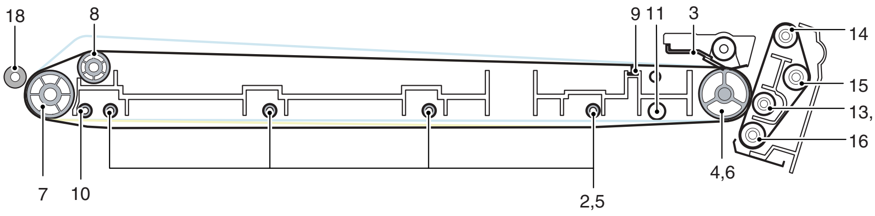


4. Maintenance

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

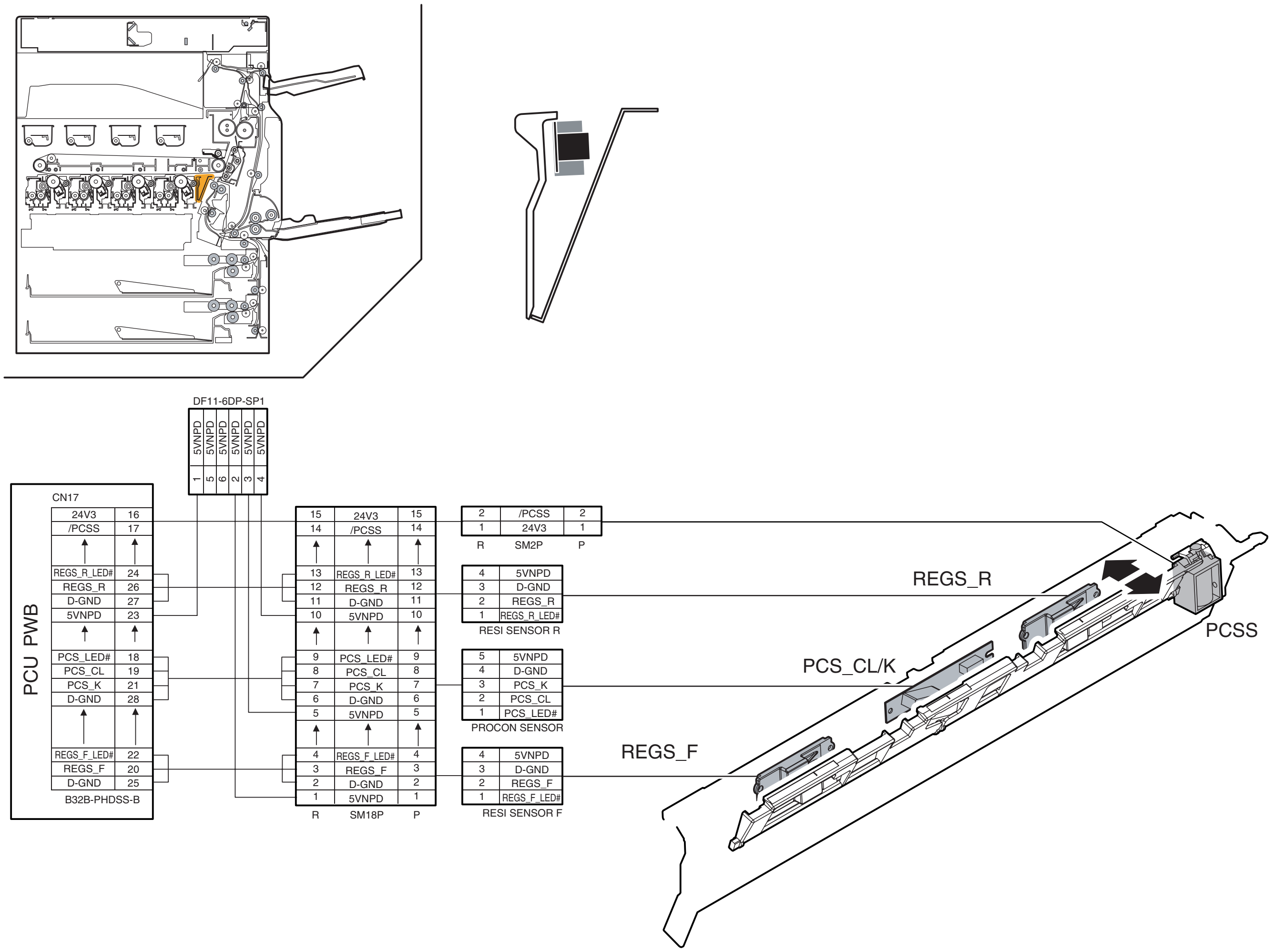
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Intermediate transfer belt	Mechanism parts	×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [26]-3)
2	Primary transfer roller		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [27]-9) (P/G No.: [28]-27)
3	Intermediate transfer blade		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [25]-19)
4	Belt drive gear		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [27]-13)
5	Primary transfer conduction collar		×	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [27]-8) (P/G No.: [28]-25)
6	Transfer drive roller			○	○	○	○	○	○	○	○	○	○	○	○	
7	Transfer follower roller			○	○	○	○	○	○	○	○	○	○	○	○	
8	Tension roller			○	○	○	○	○	○	○	○	○	○	○	○	
9	Belt CL brush			×	×	×	×	×	×	×	×	×	×	×	×	
10	Y auxiliary roller			○	○	○	○	○	○	○	○	○	○	○	○	
11	Registration backup roller			×	×	×	×	×	×	×	×	×	×	×	×	
12	Secondary transfer belt		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [30]-21)
13	Secondary transfer roller		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [30]-6)
14	Secondary belt drive roller			×	×	○	×	×	○	×	×	○	×	×	○	
15	Secondary belt tension roller			×	×	○	×	×	○	×	×	○	×	×	○	
16	Secondary belt follower roller			×	×	○	×	×	○	×	×	○	×	×	○	
17	Secondary transfer idle gear		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	(P/G No.: [29]-6)
18	Primary CL roller			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [26]-56)
19	Cleaner seal		×	×	×	×	×	×	×	×	×	×	×	×	×	
20	Cleaner seal R		×	×	×	×	×	×	×	×	×	×	×	×	×	
21	Transfer toner reception seal		×	×	×	×	×	×	×	×	×	×	×	×	×	





[M] PROCESS CONTROL SENSOR, REGISTRATION SENSOR SECTION

1. Electrical and mechanism relation diagram


DF11-6DP-SP1
5VNPD 1
5VNPD 5
5VNPD 6
5VNPD 2
5VNPD 3
5VNPD 4
PCU PWB
CN17
24V3 16
/PCSS 17
REGS_R_LED# 24
REGS_R 26
D-GND 27
5VNPD 23
PCS_LED# 18
PCS_CL 19
PCS_K 21
D-GND 28
REGS_F_LED# 22
REGS_F 20
D-GND 25
B32B-PHDSS-B
15 24V3 15
14 /PCSS 14
13 REGS_R_LED# 13
12 REGS_R 12
11 D-GND 11
10 5VNPD 10
9 PCS_LED# 9
8 PCS_CL 8
7 PCS_K 7
6 D-GND 6
5 5VNPD 5
4 REGS_F_LED# 4
3 REGS_F 3
2 D-GND 2
1 5VNPD 1
R SM18P P
2 /PCSS 2
1 24V3 1
R SM2P P
4 5VNPD
3 D-GND
2 REGS_R
1 REGS_R_LED#
RESI SENSOR R
5 5VNPD
4 D-GND
3 PCS_K
2 PCS_CL
1 PCS_LED#
PROCON SENSOR
4 5VNPD
3 D-GND
2 REGS_F
1 REGS_F_LED#
RESI SENSOR F
REGS_R
PCSS
PCS_CL/K
REGS_F

Signal name	Name	Function/Operation
PCS_CL/K	Process control sensor	Detects the toner patch density.
PCSS	Process control shutter solenoid	Opens/closes the shutter of the process control and the registration sensor.
REGS_F/R	Resist sensor	Detects the resist shift.

2. Operational descriptions

A. Process control sensor control

The shutter is provided on the monochrome (PCS_K) and color (PCS_CL) process control sensor. When the shutter is opened (the image density is corrected), the toner patch formed on the transfer belt is scanned by the process control sensor and the information is passed to the PCU.

When the shutter is closed, the gray resin section on the back of the shutter is scanned to perform calibration of the sensor itself.

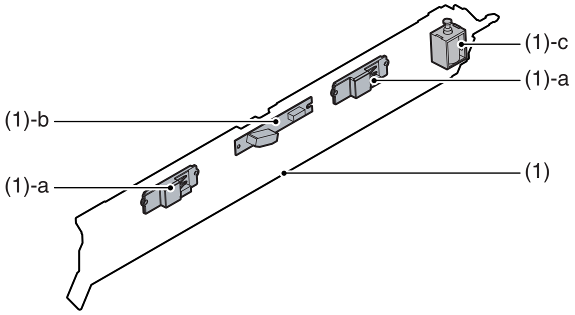
The shutter operation is controlled by the process control shutter solenoid (PCSS).

B. Registration sensor control

The registration sensor is attached to the F side (REGS_F) and the R side (REGS_R). When the shutter is opened, the registration image formed on the transfer belt is scanned by the sensor and the information is passed to the PCU.

3. Disassembly and assembly

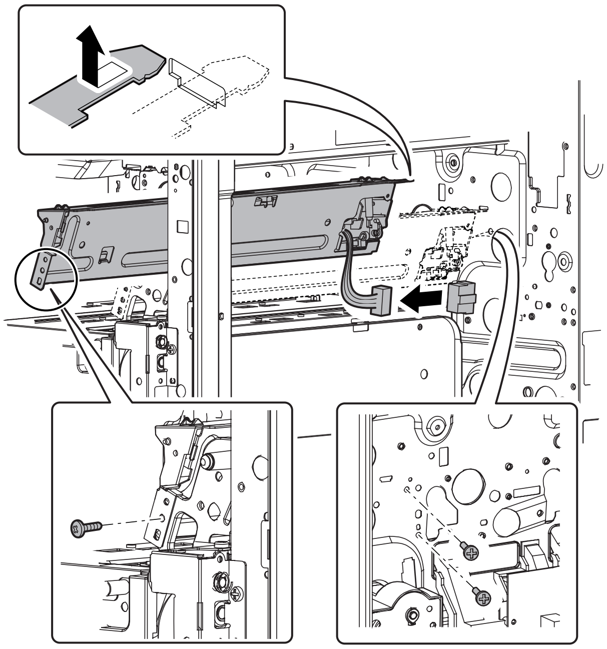
A. Process control sensor, registration sensor section



Unit		Parts		Maintenance
(1)	Process control sensor unit	a	Resist sensor	✕○
		b	Process control sensor	✕○
		c	Process control shutter solenoid	

(1) Process control sensor unit

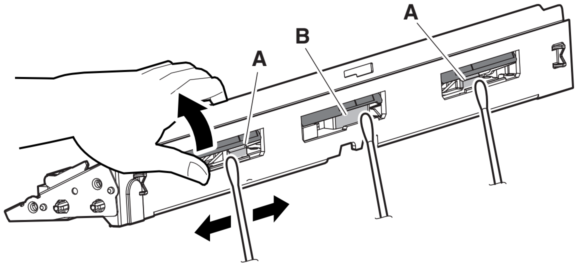
1) Remove the developing unit (K).
2) Remove the drum unit (K).
3) Remove the primary trasnfer unit.
4) Remove the paper feed tray 1.
5) Remove the rear cabinet.
6) Remove the ADU connection drive.
7) Remove the resist roller unit.
8) Disconnect the connector. Remove the screws. Release the pawl, then remove the process control sensor.



a. Resist sensor

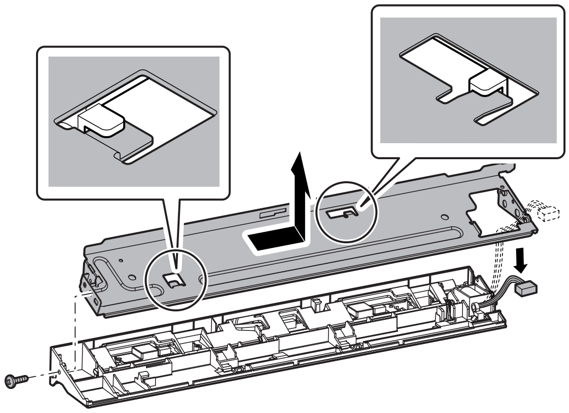
b. Process control sensor

1) Remove the process control sensor unit.
2) Push up the shutter operation plate, and clean the registration sensor (A) and the process control sensor (B).

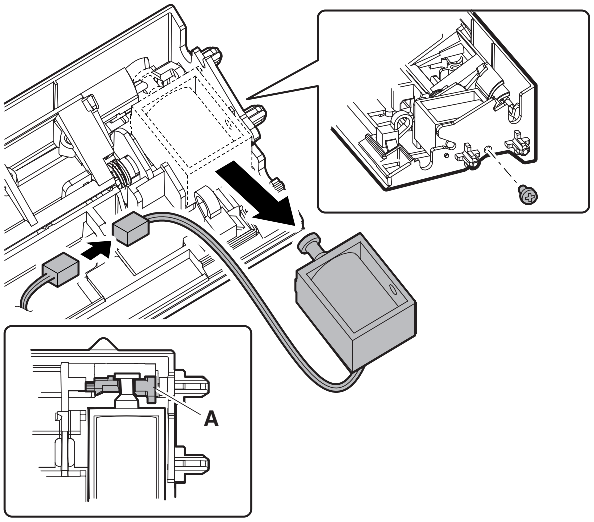


c. Process control shutter solenoid

1) Remove the process control sensor unit.
2) Remove the screw, slide the sensor mounting stay, and remove the sensor mounting stay.



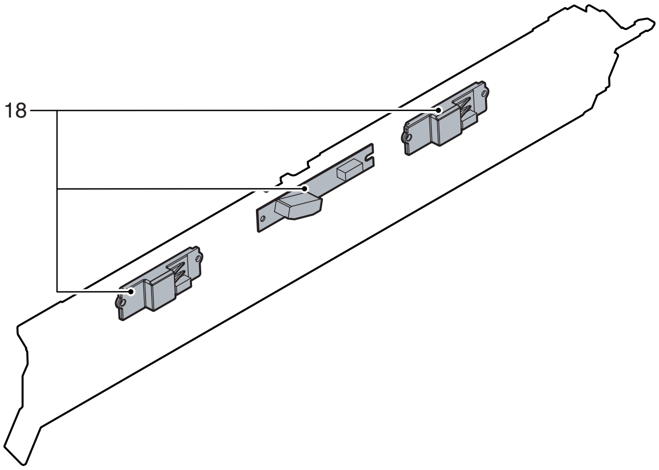
3) Remove the screws. Disconnect the connector, and remove the process control shutter solenoid.
   * When installing, engage the process control shutter solenoid with the groove in the shutter mounting plate (A).



4. Maintenance

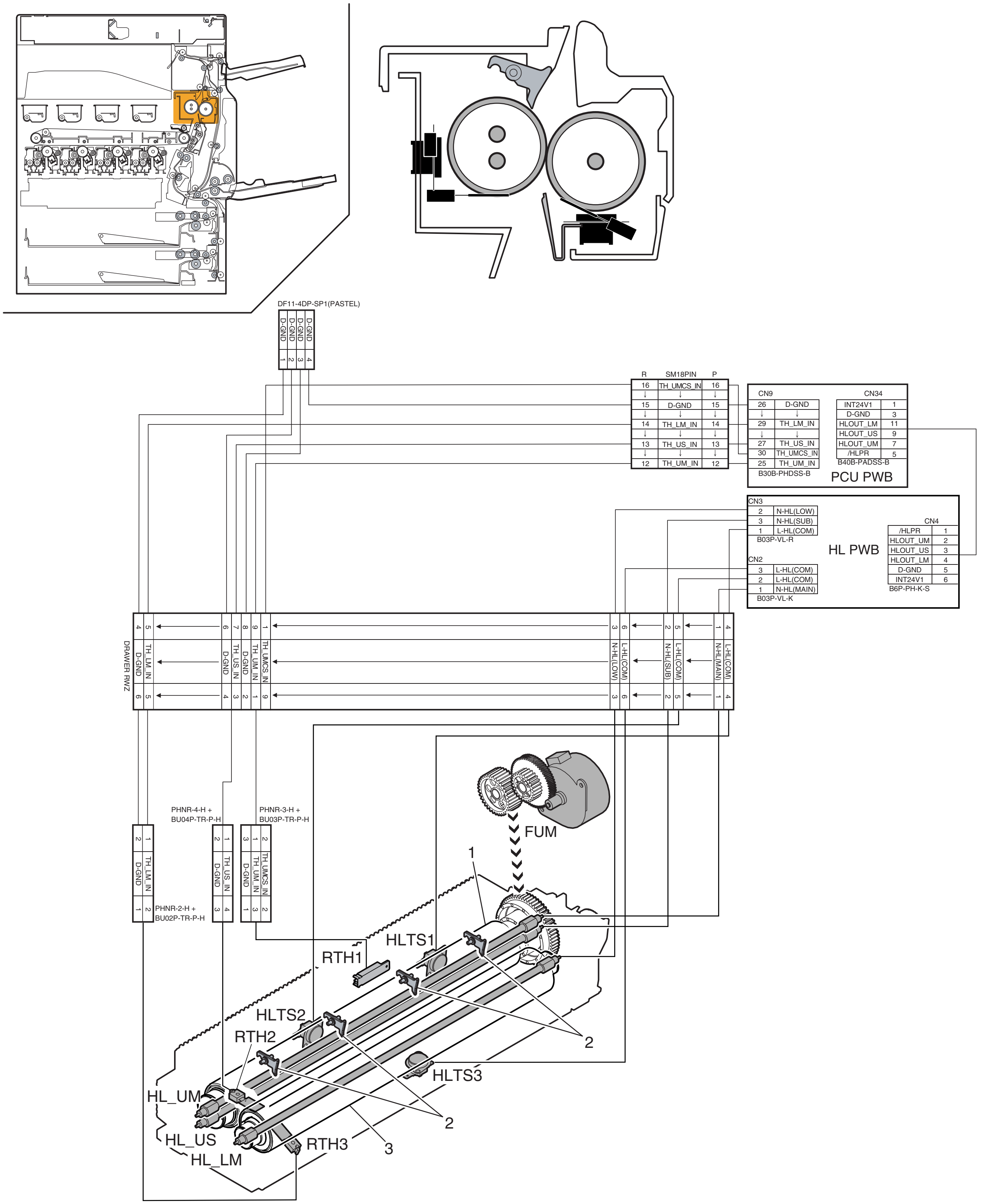
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/ Item No. (Only the replacement parts are described.)
18	Sensors (Process control resist sensors)	Mechanism parts	×	○	○	○	○	○	○	○	○	○	○	○	○	



[N] FUSING SECTION

1. Electrical and mechanism relation diagram


DF11-4DP-SP1(PASTEL)
D-GND
R
SM18PIN
P
TH_UMCS_IN
TH_LM_IN
TH_US_IN
TH_UM_IN
CN9
CN34
INT24V1
HLOUT_LM
HLOUT_US
HLOUT_UM
/HLPR
B30B-PHDSS-B
B40B-PADSS-B
PCU PWB
CN3
N-HL(LOW)
N-HL(SUB)
L-HL(COM)
B03P-VL-R
HL PWB
CN2
N-HL(MAIN)
B03P-VL-K
CN4
B6P-PH-K-S
DRAWER RWZ
PHNR-4-H +
BU04P-TR-P-H
PHNR-3-H +
BU03P-TR-P-H
PHNR-2-H +
BU02P-TR-P-H
FUM
1
HLTS1
RTH1
HLTS2
RTH2
2
HLTS3
HL_UM
HL_US
HL_LM
RTH3
3

Signal name	Name	Function/Operation
RTH1	Fusing temperature sensor (1)	Detects the surface temperature of the fusing roller (heating). (Center section)
RTH2	Fusing temperature sensor (2)	Detects the surface temperature of the fusing roller (heating). (Edge section)
HLTS1	Thermostat (1)	Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)]
HLTS2	Thermostat (2)	Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)]
HL_UM	Heater lamp (1)	Heats the fusing roller (heating).

Signal name	Name	Function/Operation
HL_US	Heater lamp (2)	Heats the fusing roller (heating).
RTH3	Fusing temperature sensor (3)	Detects the surface temperature of the fusing roller (heating).
HLTS3	Thermostat (3)	Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)]
HL_LM	Heater lamp (3)	Heats the fusing roller (heating).
FUM	Fusing motor	Drives the fusing unit.

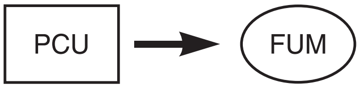
No.	Name	Function/Operation
1	Fusing roller (Heating)	Heat and presses toner on paper to fuse it on paper.
2	Pawl	Paper which was not separated naturally from the fusing roller (heating) is mechanically separated.
3	Fusing roller (pressing)	Heat and presses toner on paper to fuse it on paper.

2. Operational descriptions

A. Fusing unit drive

To drive the fusing unit, the drive power is transmitted from the drive motor (FUM) through the connection gear to the upper heat roller gear.

The drive motor (stepping motor) is driven according to the control signal sent from the PCU.



B. Heater lamp drive

The surface temperature of the heat roller detected by the thermistor is sent to the PCU. When the temperature is lower than the specified level, the heater lamp lighting signal is sent from the PCU to the heater lamp drive circuit in the sub power PWB.

The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

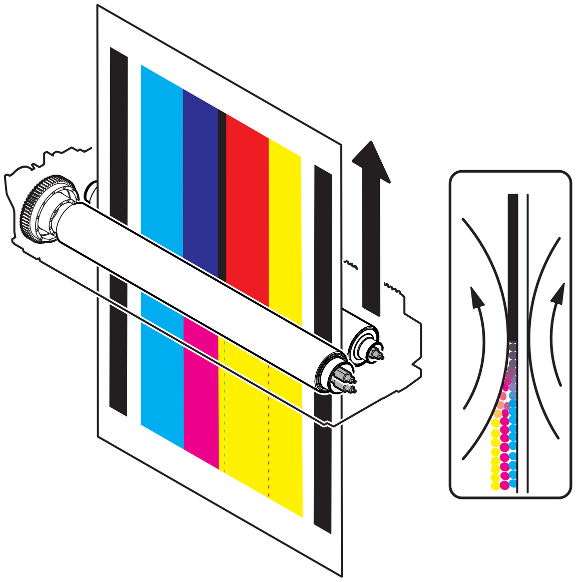
To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, power supply (AC line) to the heater lamp is cut off.

C. Fusing operation

Color toner of YMCK on paper is heated and pressed by the heat rollers to be fused on paper.

At that time, color toner of YMCK is mixed to reproduce nearly actual colors of document images.



The upper and the lower heat rollers are provided to heat from above and below.

This is because it is necessary to heat four layers of toner from above and below and right and left to fuse it on paper.

The upper and lower heat rollers are of silicon rubber.

This is because of the following reasons:

1) To provide a greater nip quantity and a higher heating capacity for paper.
2) The soft, flexible rollers press multi-layer toner without deformation to fuse on paper.
3) An even pressure is applied to an uneven surface of multi-layer toner.

D. Fusing temperature control

The temperature sensors are provided at the center and the edges of the upper heat roller, and at the center of the lower heat roller.

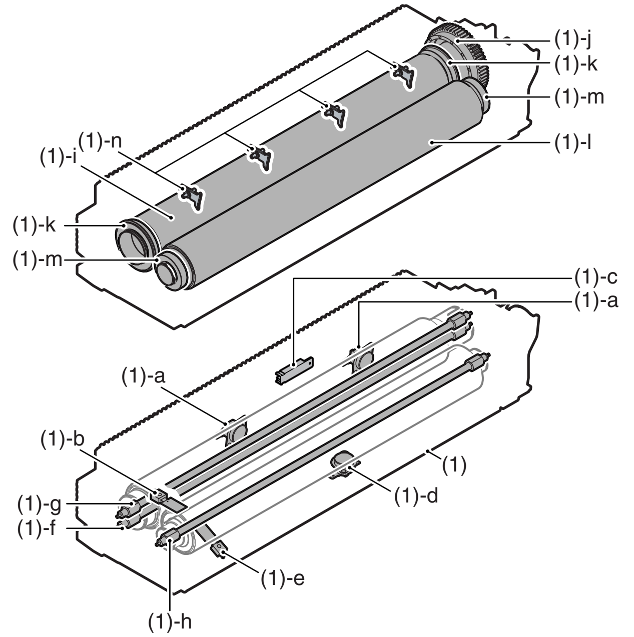
The heat roller temperature is detected by the temperature sensors to control the heater lamp so that the temperature is maintained at the specified level.

The fusing temperature is switched according to the machine condition and paper type selected.

Mode	Paper	Fusing roller center (heating) main	Fusing roller (heating) sub	Fusing roller (pressing)
Ready state Print mode	B/W normal paper	170	180	130
	Color normal paper	170	180	130
	Heavy paper	170	175	140
	OHP	170	170	145
	Envelope	180	180	145

3. Disassembly and assembly

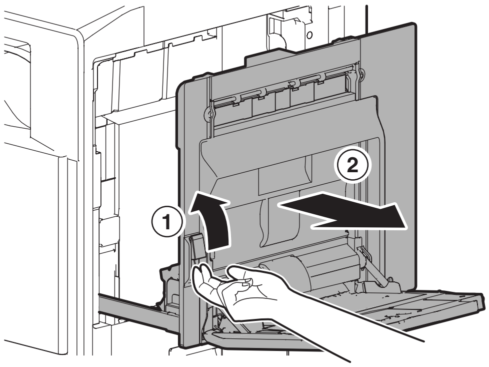
A. Fusing section



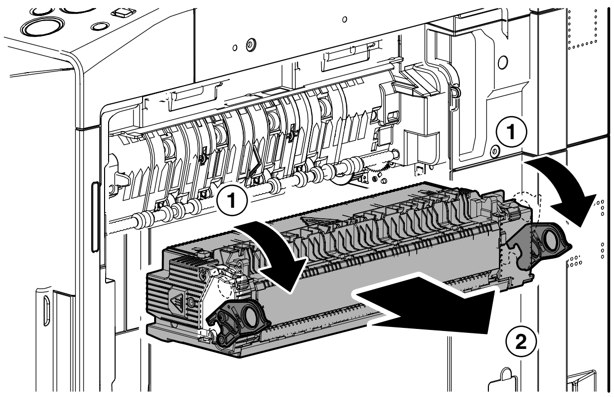
Unit		Parts		Maintenance
(1)	Fusing unit	a	Upper thermostat	
		b	Upper thermistor	×▲
		c	Non-contact thermistor	×
		d	Lower thermostat	
		e	Lower thermistor	×▲
		f	Upper heater lamp main	
		g	Upper heater lamp sub	
		h	Lower heater lamp	
		i	Upper heat roller	×▲
		j	Upper heat roller gear	×▲
		k	Upper heat roller bearing	×▲
		l	Lower heat roller gear	×▲
		m	Lower heat roller bearing	×▲
		n	Upper separation pawl	×▲

(1) Fusing unit

1) Open the right door unit.

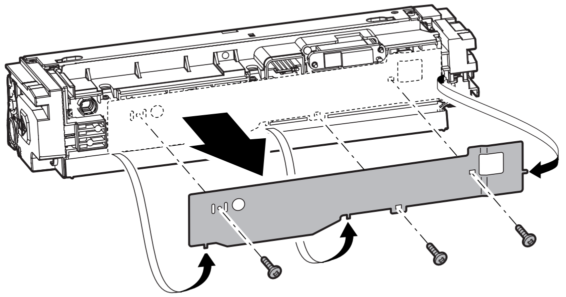


2) Release the lock lever, and remove the fusing unit.

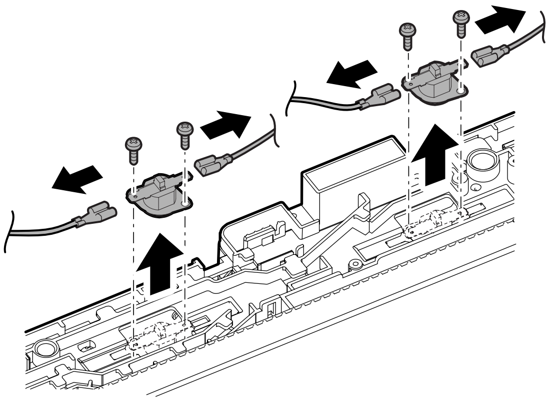


a. Upper thermostat

1) Remove the fusing unit.
2) Remove the screws and the fusing upper cover.

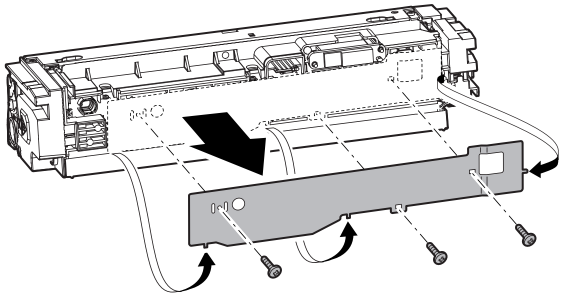


3) Disconnect the connector, and remove the upper thermostat.

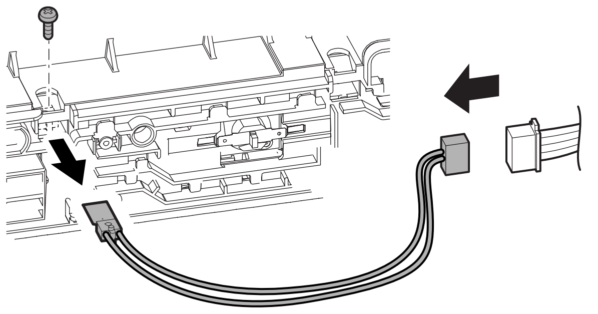


b. Upper thermistor

1) Remove the fusing unit.
2) Remove the screws and the fusing upper cover.

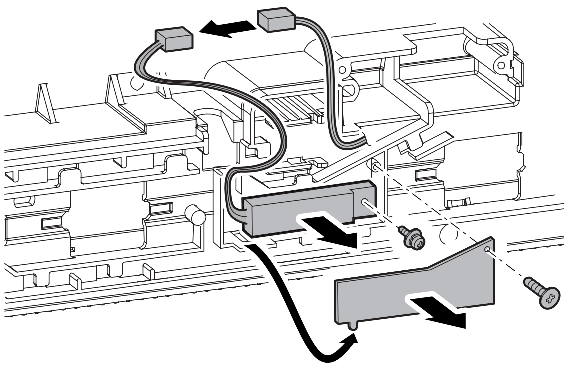


3) Disconnect the connector, and remove the upper thermistor.



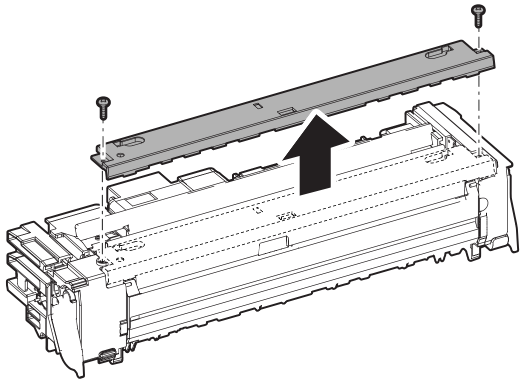
c. Non-contact thermistor

1) Remove the fusing upper cover.
2) Remove the screws, and remove the cover. Remove the connector and the screws, then remove the non-contact thermistor.

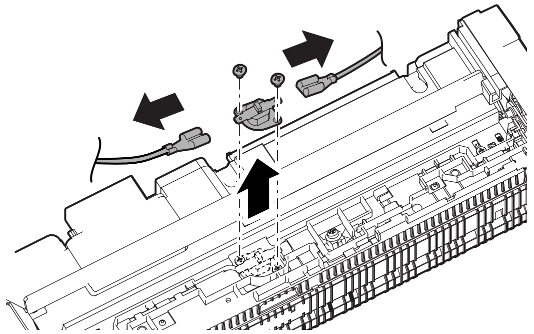


d. Lower thermostat

1) Remove the fusing unit.
2) Remove the fusing lower cover.

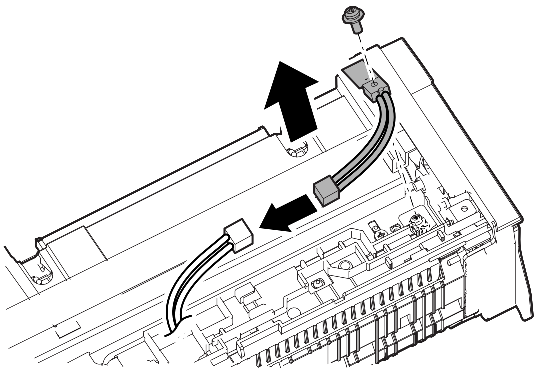


3) Disconnect the connector, and remove the lower thermostat.



e. Lower thermistor

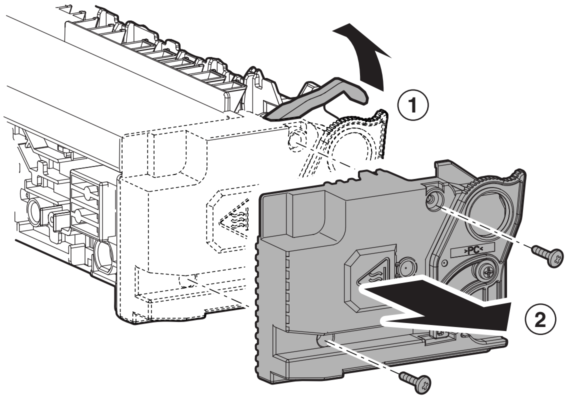
1) Remove the fusing unit.
2) Remove the fusing lower cover.
3) Disconnect the connector, and remove the lower thermistor.



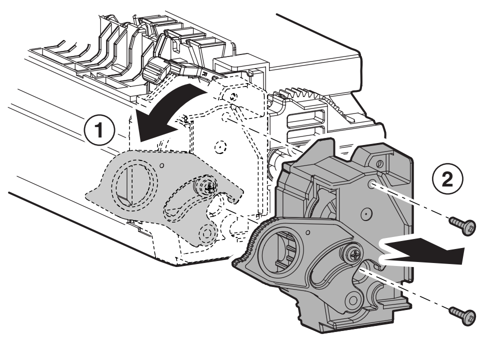
f. Upper heater lamp main

g. Upper heater lamp sub

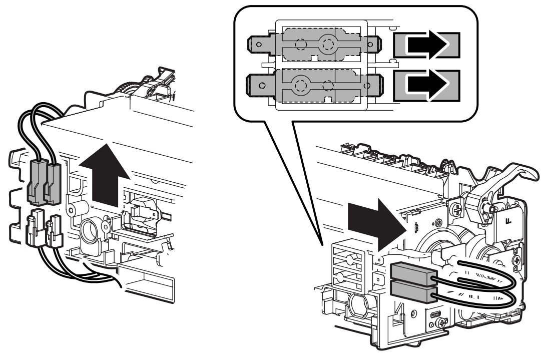
1) Remove the fusing unit.
2) Release the pressure release lever, and remove the fusing upper cover F.



3) Tilt the lock lever, and remove the fusing upper cover R.



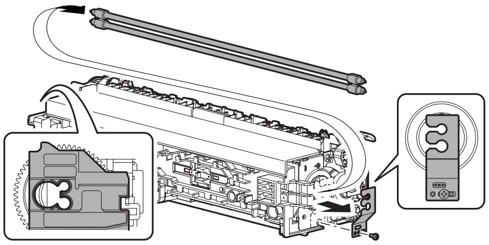
4) Disconnect the connector.



5) Remove the lamp holder, and remove the lamp.

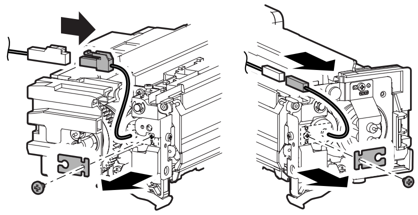
   * Since the connector shape on the front side differ from that on the rear side, be careful when installing.

   Install so that the red harness is on the rear side.



h. Lower heater lamp

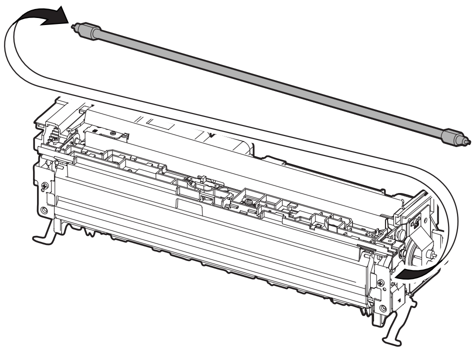
1) Remove the fusing unit.
2) Remove the fusing upper cover F.
3) Remove the fusing upper cover R.
4) Disconnect the connector, and remove the lamp holder.



5) Remove the lower heater lamp.

   * Since the connector shape on the front side differ from that on the rear side, be careful when installing.

   Install so that the red harness is on the rear side.

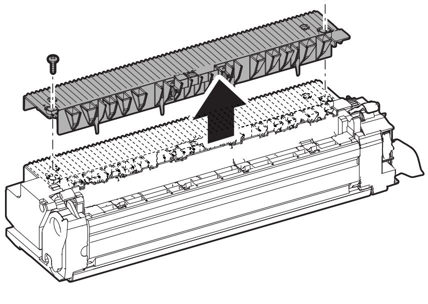


i. Upper heat roller

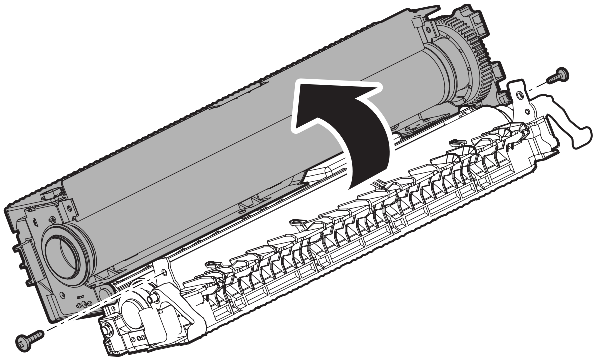
j. Upper heat roller gear

k. Upper heat roller bearing

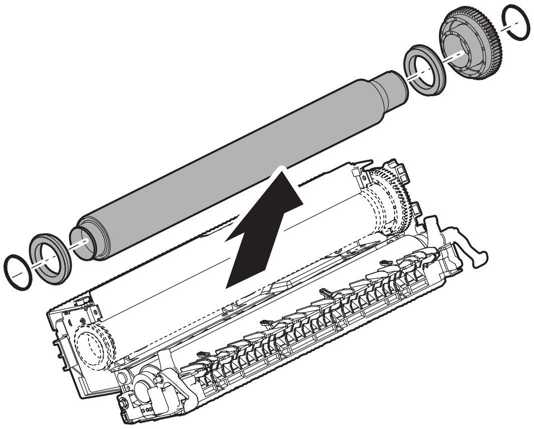
1) Remove the fusing unit.
2) Remove the upper heater lamp.
3) Remove the fusing rear upper PG.



4) Release the pressure.
5) Open the fusing unit.



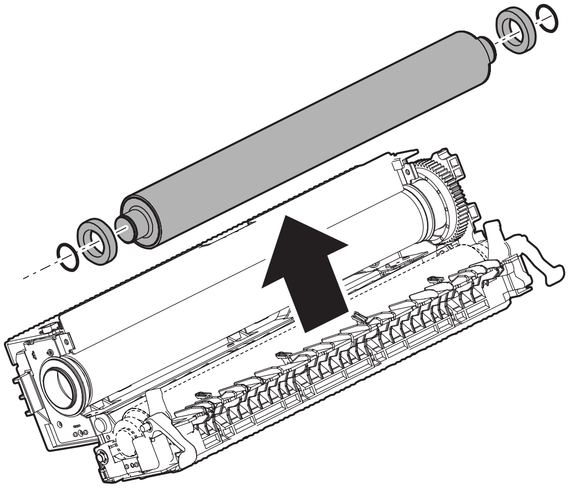
6) Remove the upper heat roller unit, and remove the parts.



l. Lower heat roller gear

m. Lower heat roller bearing

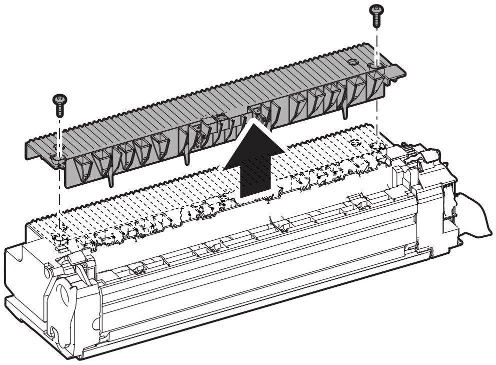
1) Remove the fusing unit.
2) Remove the lower heater lamp.
3) Release the pressure, and open the fusing unit.
4) Remove the lower heat roller unit, and remove the parts



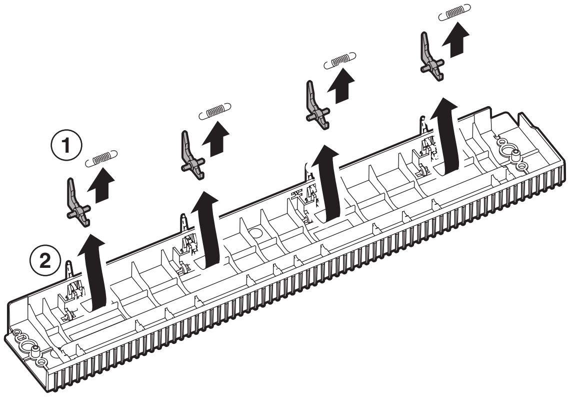
n. Upper separation pawl

1) Remove the fusing unit.

2) Remove the fusing rear upper PG.



3) Remove the spring, and remove the upper separation pawl.

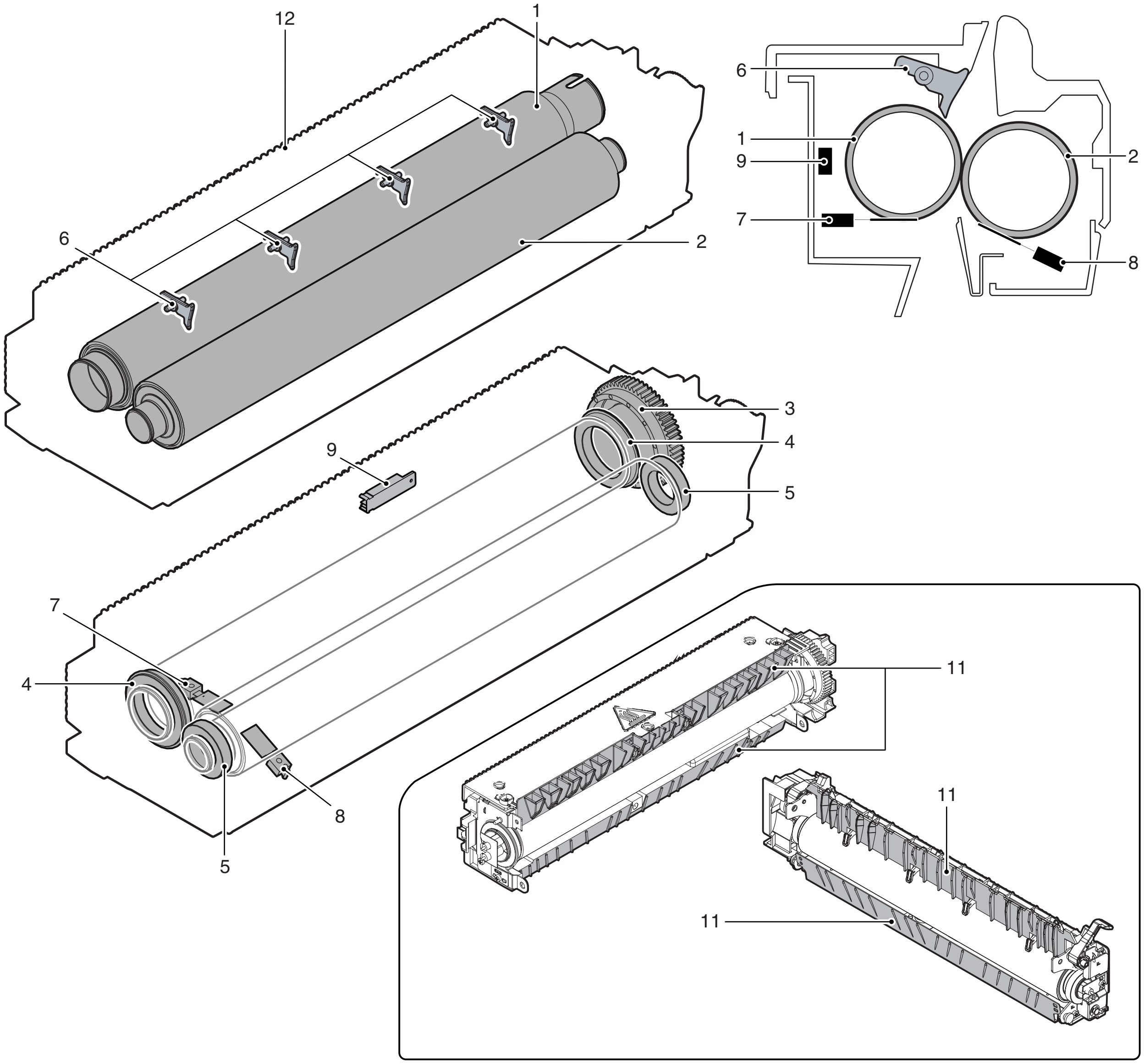


4. Maintenance

A. Fusing section

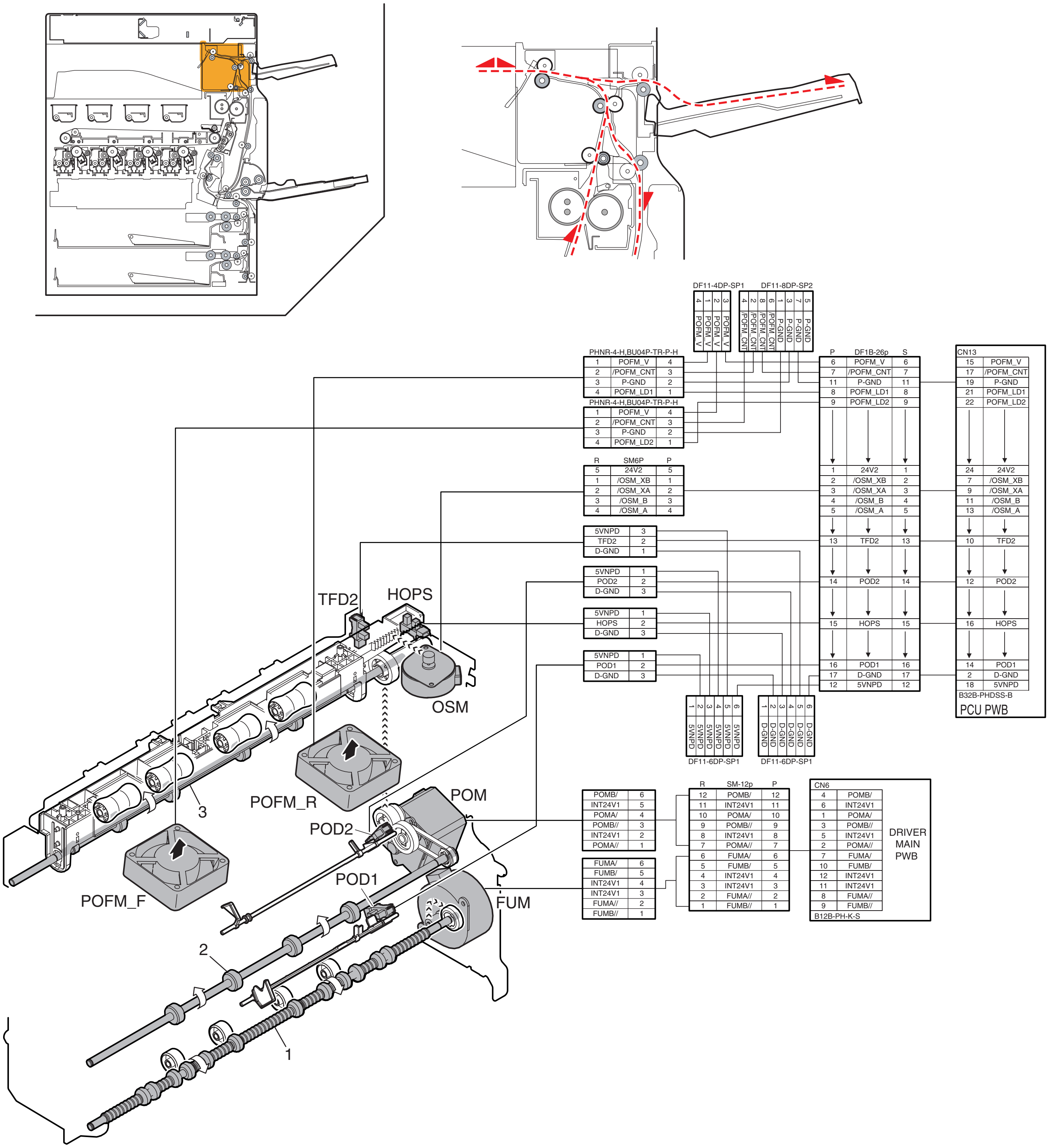
×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Upper heat roller	Mechanism parts	×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-32)
2	Lower heat roller		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-15)
3	Upper heat roller gear		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-30)
4	Upper roller bearing		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-31)
5	Lower heat roller bearing		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-14)
6	Upper separation pawl		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-11)
7	Upper thermistor		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [32]-18)
8	Lower thermistor		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [33]-20)
9	Non-contact thermistor		×	×	×	▲	×	×	▲	×	×	▲	×	×	▲	
10	Gears		×	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Specified position
11	Paper guide		○	○	○	○	○	○	○	○	○	○	○	○	○	
12	Fusing unit		×	×	▲	×	▲	×	▲	×	▲	×	▲	×	▲	(P/G No.: [31]-901) (P/G No.: [32]-901) (P/G No.: [33]-901)



[O] PAPER EXIT SECTION

1. Electrical and mechanism relation diagram


TFD2
HOPS
OSM
POFM_R
POM
POD2
POD1
FUM
POFM_F
1
2
3
DF11-4DP-SP1
4 POFM_V
1 POFM_V
2 POFM_V
3 POFM_V
DF11-8DP-SP2
4 /POFM_CNT
2 /POFM_CNT
8 /POFM_CNT
6 /POFM_CNT
1 P-GND
3 P-GND
7 P-GND
5 P-GND
PHNR-4-H,BU04P-TR-P-H
1 POFM_V 4
2 /POFM_CNT 3
3 P-GND 2
4 POFM_LD1 1
PHNR-4-H,BU04P-TR-P-H
1 POFM_V 4
2 /POFM_CNT 3
3 P-GND 2
4 POFM_LD2 1
R SM6P P
5 24V2 5
1 /OSM_XB 1
2 /OSM_XA 2
3 /OSM_B 3
4 /OSM_A 4
5VNPD 3
TFD2 2
D-GND 1
5VNPD 1
POD2 2
D-GND 3
5VNPD 1
HOPS 2
D-GND 3
5VNPD 1
POD1 2
D-GND 3
P DF1B-26p S
6 POFM_V 6
7 /POFM_CNT 7
11 P-GND 11
8 POFM_LD1 8
9 POFM_LD2 9
1 24V2 1
2 /OSM_XB 2
3 /OSM_XA 3
4 /OSM_B 4
5 /OSM_A 5
13 TFD2 13
14 POD2 14
15 HOPS 15
16 POD1 16
17 D-GND 17
12 5VNPD 12
CN13
15 POFM_V
17 /POFM_CNT
19 P-GND
21 POFM_LD1
22 POFM_LD2
24 24V2
7 /OSM_XB
9 /OSM_XA
11 /OSM_B
13 /OSM_A
10 TFD2
12 POD2
16 HOPS
14 POD1
2 D-GND
18 5VNPD
B32B-PHDSS-B
PCU PWB
1 5VNPD
2 5VNPD
3 5VNPD
4 5VNPD
5 5VNPD
6 5VNPD
DF11-6DP-SP1
1 D-GND
2 D-GND
3 D-GND
4 D-GND
5 D-GND
6 D-GND
DF11-6DP-SP1
POMB/ 6
INT24V1 5
POMA/ 4
POMB// 3
INT24V1 2
POMA// 1
FUMA/ 6
FUMB/ 5
INT24V1 4
INT24V1 3
FUMA// 2
FUMB// 1
R SM-12p P
12 POMB/ 12
11 INT24V1 11
10 POMA/ 10
9 POMB// 9
8 INT24V1 8
7 POMA// 7
6 FUMA/ 6
5 FUMB/ 5
4 INT24V1 4
3 INT24V1 3
2 FUMA// 2
1 FUMB// 1
CN6
4 POMB/
6 INT24V1
1 POMA/
3 POMB//
5 INT24V1
2 POMA//
7 FUMA/
10 FUMB/
12 INT24V1
11 INT24V1
8 FUMA//
9 FUMB//
B12B-PH-K-S
DRIVER MAIN PWB

Signal name	Name	Function/Operation
FUM	Fusing drive motor	Drives the fusing unit.
HOPS	Shifter home position detection	Detects the shifter home position.
OSM	Shifter motor	Offsets the paper.
POD1	Fusing after detection	After fusing, paper exit from fusing section is detected.
POD2	Paper exit detection	Detects the exit paper.
POFM_F	Paper exit cooling fan motor (F side)	Cools the fusing unit.
POFM_R	Paper exit cooling fan motor (R side)	Cools the fusing unit.
POM	Paper exit drive motor	Drives the paper exit roller.
TFD2	Paper exit full detection	Detects face-down paper exit tray full.

No.	Name	Function/Operation
1	Transport roller 9 (Drive)	Transports the paper from the fixing roller to the transport roller 13.
2	Transport roller 13 (Drive)	Paper transported from the transport roller 9 is transported to the paper exit roller 1. / Paper is transported to the duplex (ADU) section.
3	Paper exit roller 1 (Drive)	Paper is discharged. / Paper is transported to the right paper exit tray. / Paper is transported to the duplex (ADU) section.

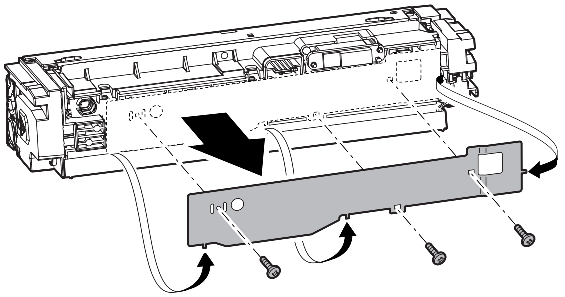
2. Operational descriptions

A. Paper exit section

- Paper transported from the fusing section is passed to the transport roller 13 which is driven by the paper exit drive motor and to the paper exit roller 1, then discharged to the inner tray.
- When paper is discharged to the right tray, it is passed to the paper exit roller 1 and the paper exit drive motor is reversely rotated, and paper is passed over the ADU reverse gate and discharged to the right tray.

3. Disassembly and assembly

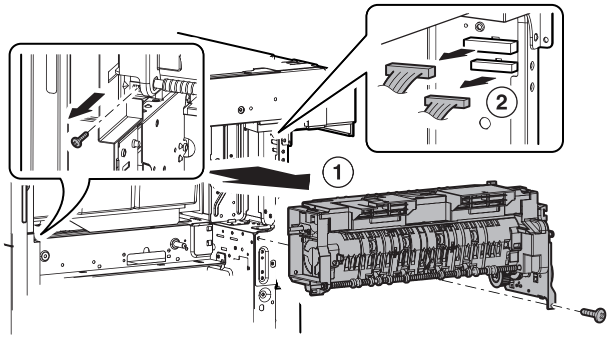
A. Paper exit section



Unit			Parts	Maintenance
(1)	Paper exit unit	a	Exit paper full detection sensor	
		b	Shifter home position detection sensor	
		c	Paper exit detection sensor	
		d	After-fusing sensor	
		e	Paper exit cooling fan motor	
		f	Discharge brush	×
		g	Shifter motor	
		h	Paper exit roller 1 (Drive)	×○
		i	Fusing drive motor	
		j	Paper exit drive motor	
		k	Transport roller 13 (Drive)	×○
		l	Transport roller 9 (Drive)	×○

(1) Paper exit unit

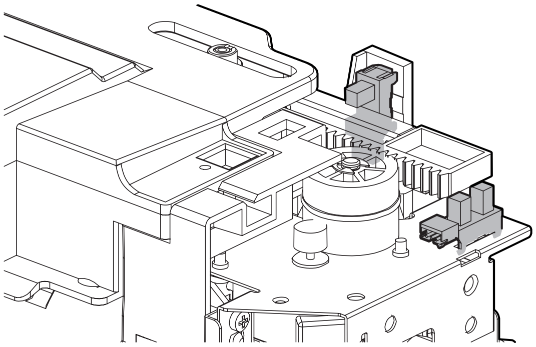
1) Remove the paper exit unit, and disconnect the connector.



a. Exit paper full detection sensor

b. Shifter home position detection sensor

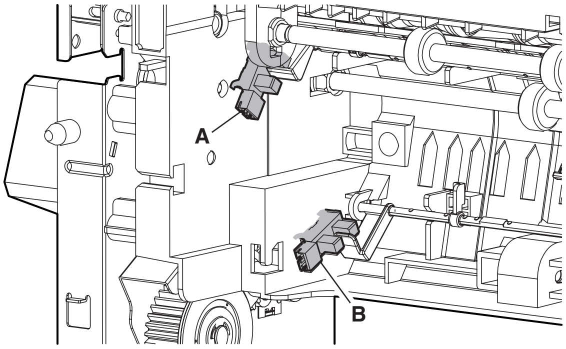
1) Remove the paper exit unit.



c. Paper exit detection sensor

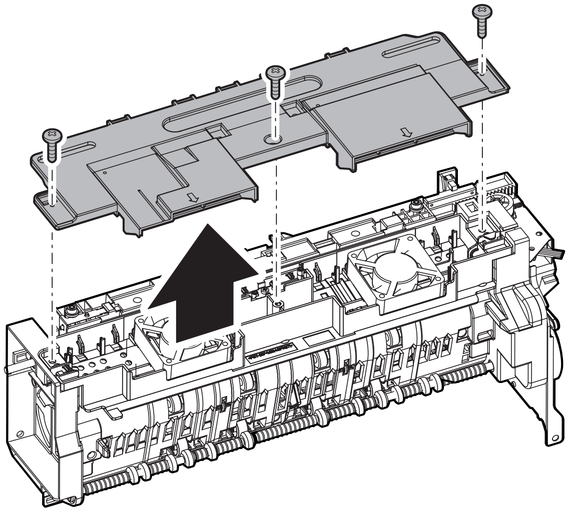
d. After-fusing sensor

1) Remove the paper exit unit.
2) Paper exit sensor (A), after-fusing sensor (B)

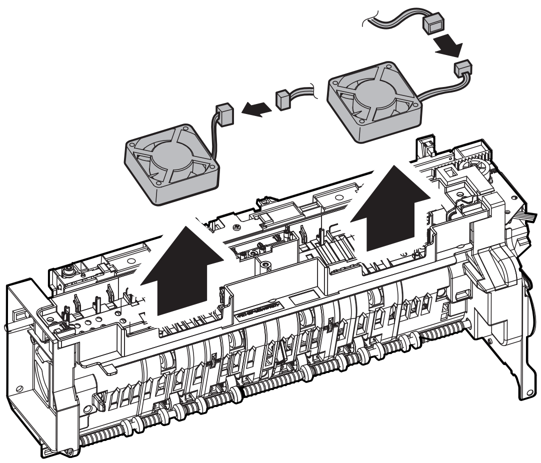


e. Paper exit cooling fan motor

1) Remove the paper exit unit.
2) Remove the exhaust fan duct.

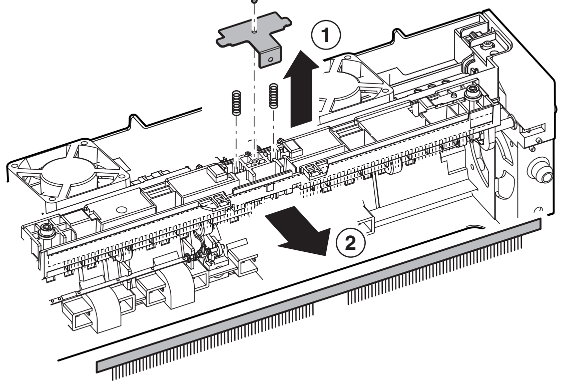


3) Remove the paper exit cooling fan motor.



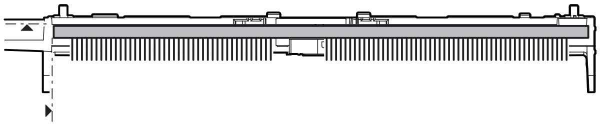
f. Discharge brush

1) Remove the paper exit unit.
2) Remove the exhaust fan duct.
3) Remove the discharge grounding plate, and remove the discharge brush.



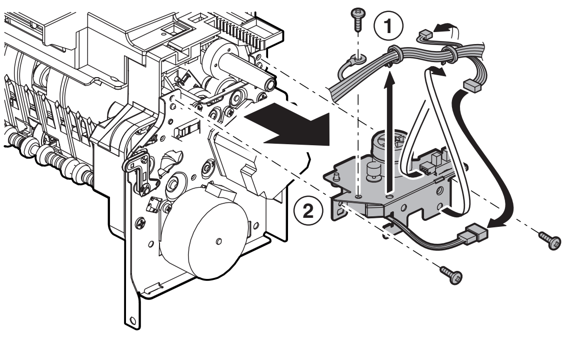
* Discharge brush attachment reference

When attaching the discharge brush, attach it along the shifter PG.

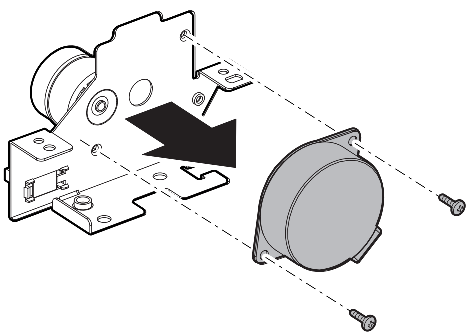


g. Shifter motor

1) Remove the paper exit unit.
2) Disconnect the connector and the grounding terminal, and remove the snap band. Remove the slide motor unit.

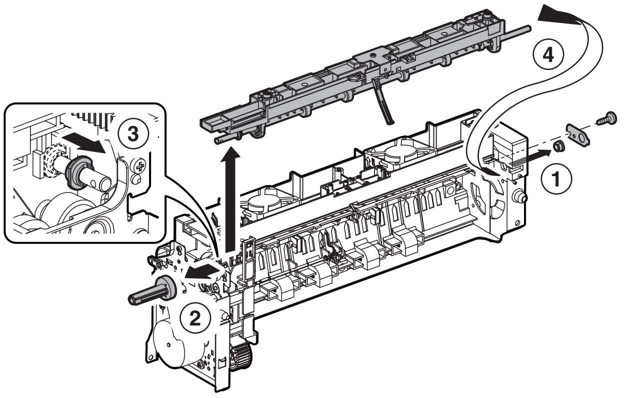


3) Remove the shifter motor.

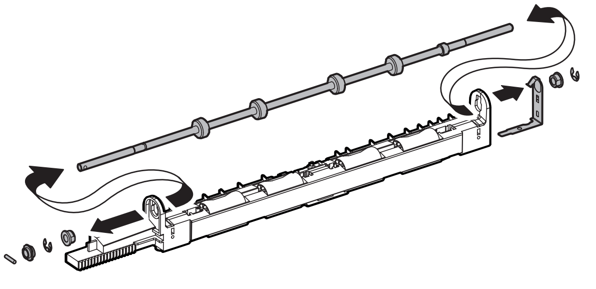


h. Paper exit roller 1 (Drive)

1) Remove the paper exit unit.
2) Remove the exhaust fan duct.
3) Remove the slide motor unit.
4) Remove the parts. Slide the bearing, and remove the shifter unit.

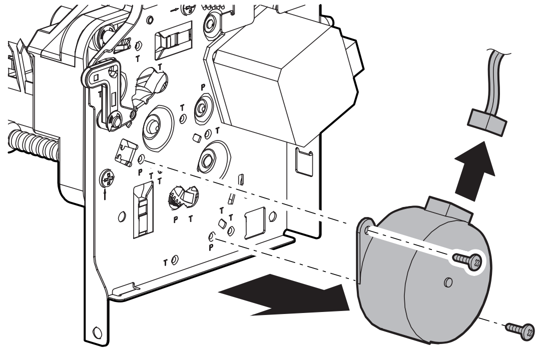


5) Remove the parts, and remove the paper exit roller 1 (drive).



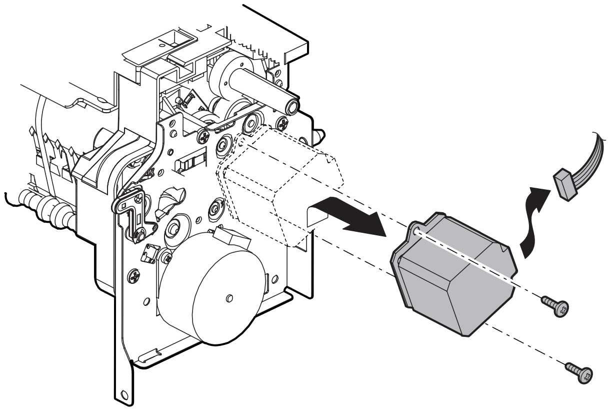
i. Fusing drive motor

1) Remove the paper exit unit.
2) Remove the fusing drive motor.



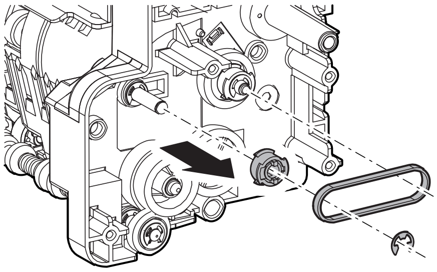
j. Paper exit drive motor

1) Remove the paper exit unit.
2) Remove the paper exit drive motor.

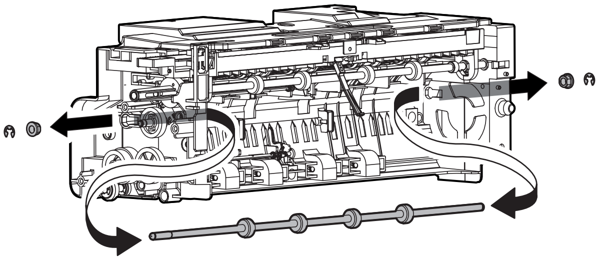


k. Transport roller 13 (Drive)

1) Remove the paper exit unit.
2) Remove the slide motor unit.
3) Remove the paper exit drive unit.
4) Remove the E-ring, the reverse drive belt, and the pulley.

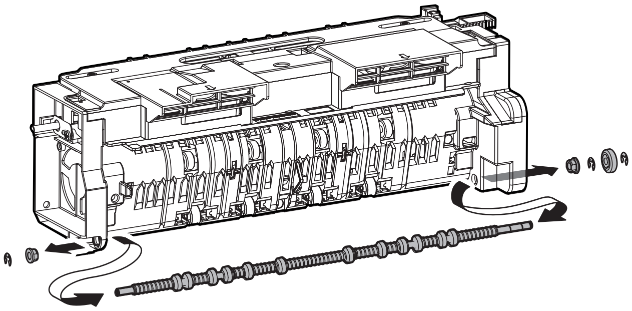


5) Remove the E-ring and the bearing, and remove the transport roller 13 (Drive).



l. Transport roller 9 (Drive)

1) Remove the paper exit unit.
2) Remove the slide motor unit.
3) Remove the paper exit drive unit.
4) Remove the parts, and remove the transport roller 9 (Drive).

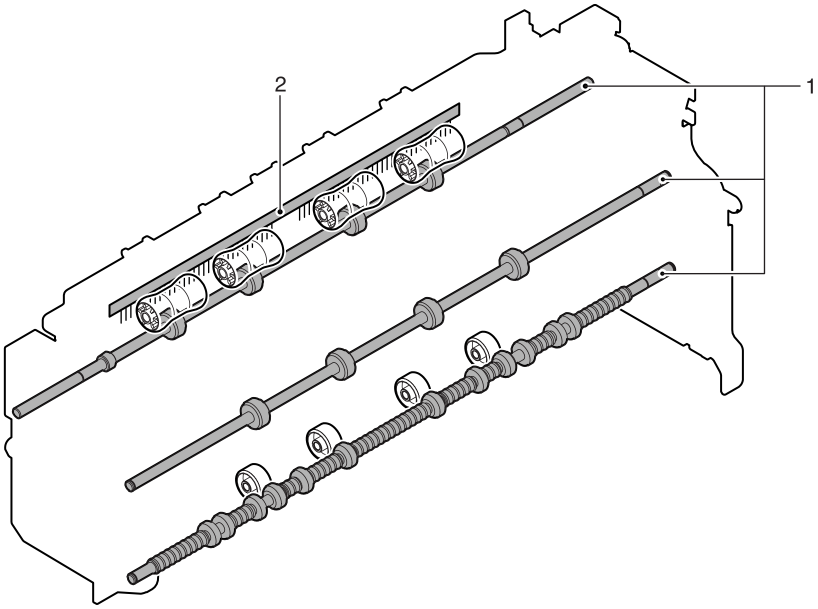


4. Maintenance

A. Paper exit section

×: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shif the position.

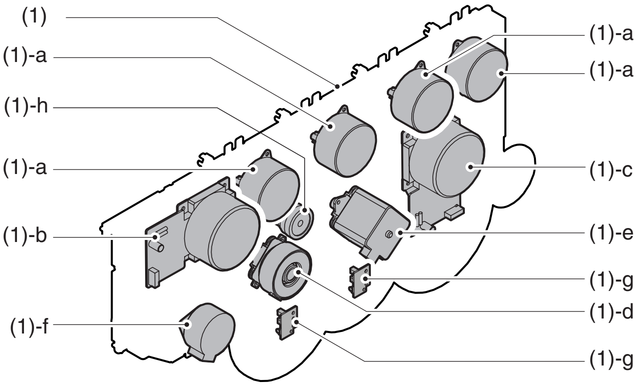
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Transport rollers	Mechanism parts	×	○	○	○	○	○	○	○	○	○	○	○	○	
2	Discharge brush		×	×	×	×	×	×	×	×	×	×	×	×	×	



[P] DRIVE SECTION

1. Disassembly and assembly

A. Main drive section

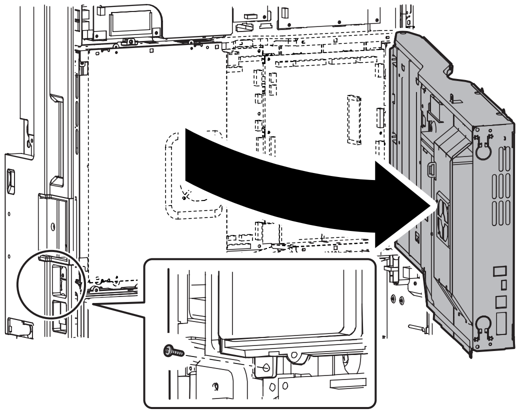


Unit		Parts	
(1)	Main drive unit	a	Toner motor
		b	Developer drive motor (K)
		c	Developing drive motor (CL)
		d	Drum motor (K)
		e	Drum motor (CL)
		f	Resist motor
		g	Phase detection PWB
		h	Separation clutch

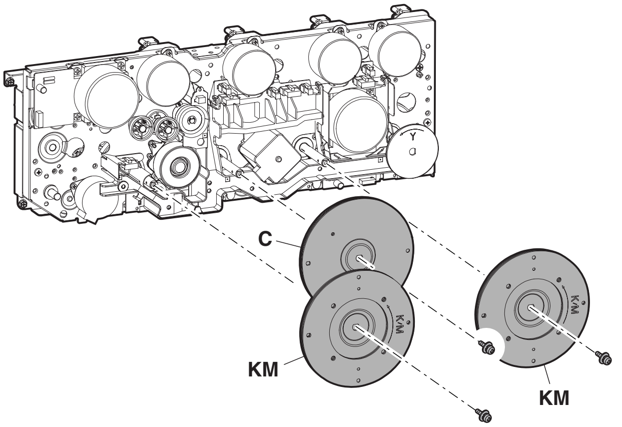
(1) Main drive unit

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)

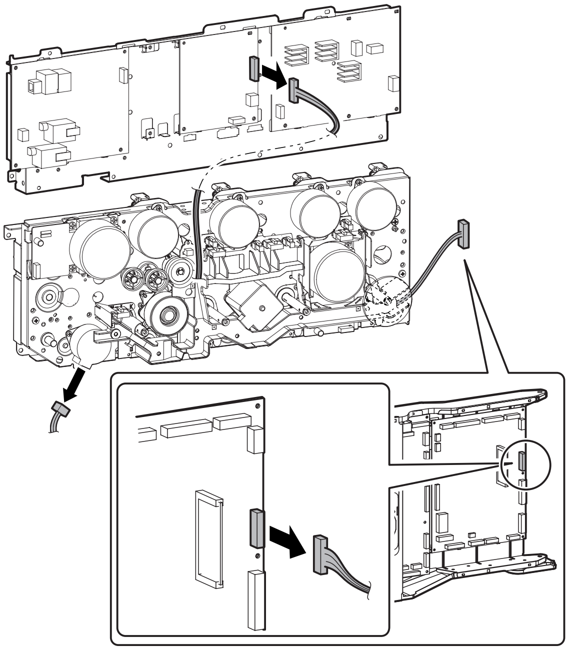
2) Remove the screws, and open the control box.



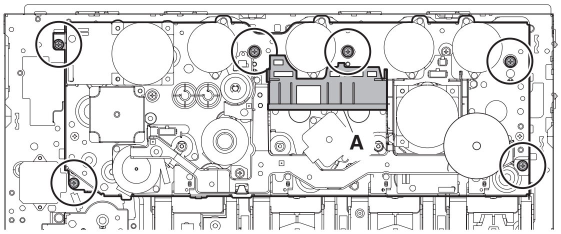
3) Remove the flywheel.
   - * Installing sequence: (1) C → (2) KM → (3) KM (Each color is marked.)
   - * After installation, check to confirm that it is not in contact with the harness, etc.

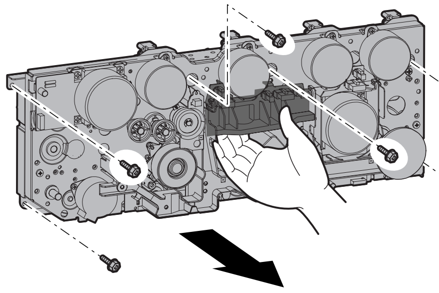


4) Remove the connectors.



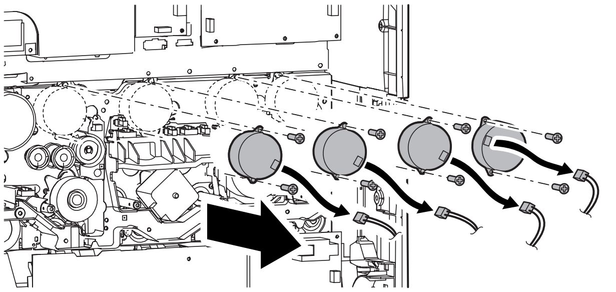
5) Remove the screws, and remove the main drive unit.
   * Hold section A and remove.





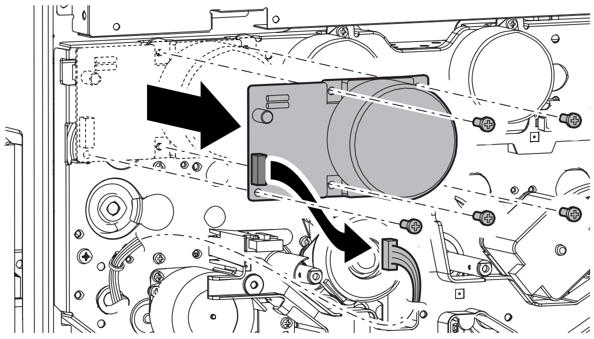
a. Toner motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the connector and the screws, then remove the toner motor.



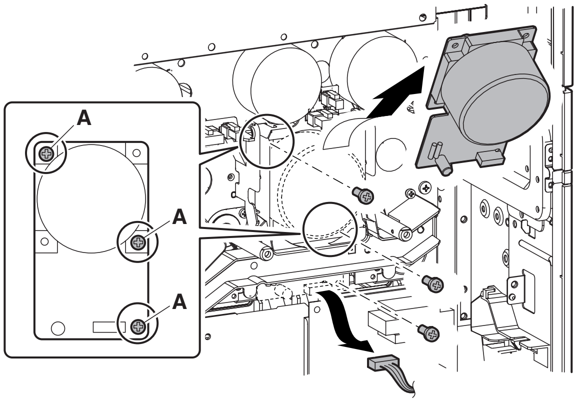
b. Developer drive motor (K)

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the flywheel.
4) Remove the connector and the screws, then remove the developer drive motor (K).



c. Developing drive motor (CL)

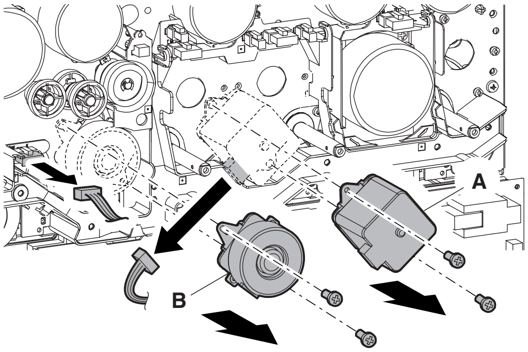
1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the flywheel.
4) Remove the connector and the screws, and remove the developer drive motor (CL).
   * When installing, tighten the screws in section (A).



d. Drum motor (K)

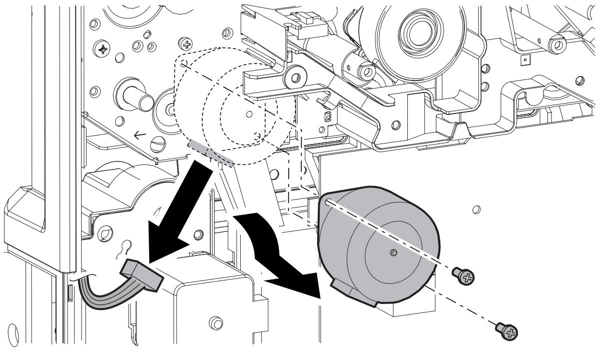
e. Drum motor (CL)

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the flywheel.
4) Remove the connector and the screws, then remove the drum motor (K) and the drum motor (CL).



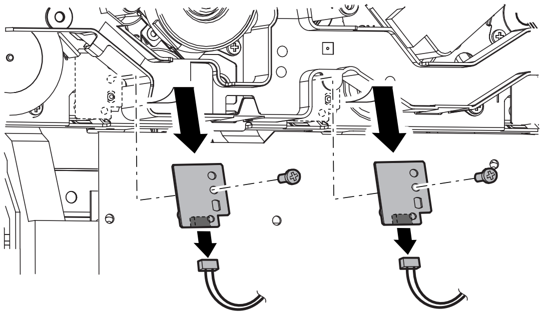
f. Resist motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the flywheel.
4) Remove the connctor and the screws, then remove the resist motor.



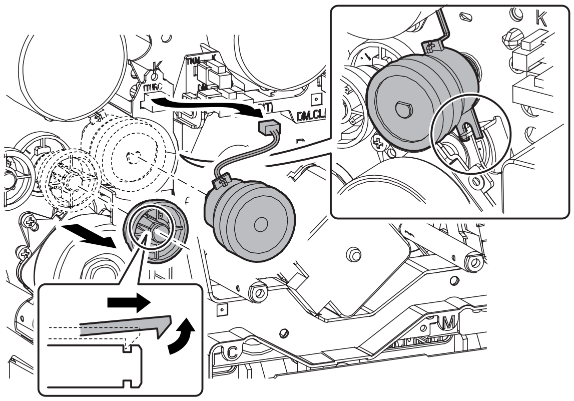
g. Phase detection PWB

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the flywheel.
4) Remove the screws, and remove the phase detection PWB. Disconnect the connector.

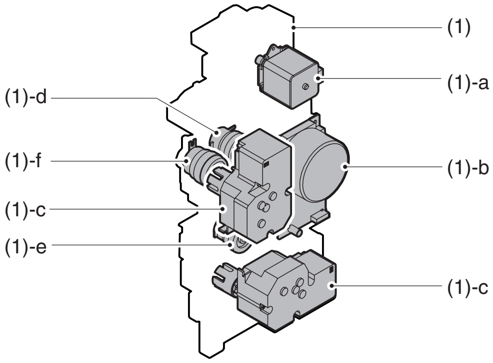


h. Separation clutch

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the flywheel.
4) Remove the gear, and remove the separation clutch. Then disconnect the connector.
   * When installing, check to insure that the clutch rotation-stop projection is engaged with the sub frame projection.



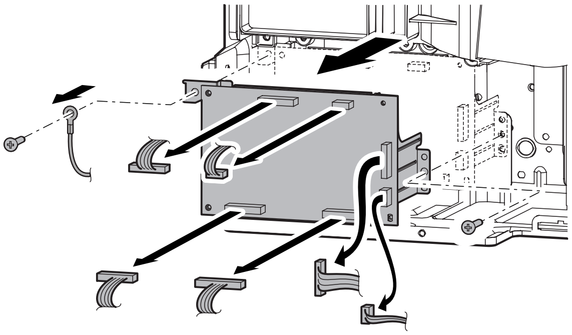
B. Paper feed drive section



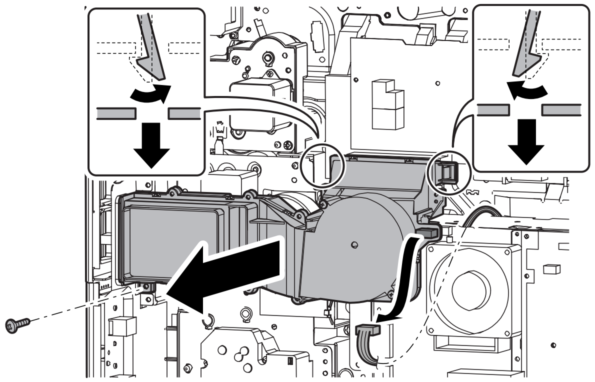
Unit		Parts	
(1)	Paper feed drive unit	a	Transport motor
		b	Paper feed motor
		c	Paper tray lift-up motor
		d	Paper feed clutch (Paper feed tray 1)
		e	Paper feed clutch (Paper feed tray 2)
		f	Tray vertical transport clutch

(1) Paper feed drive unit

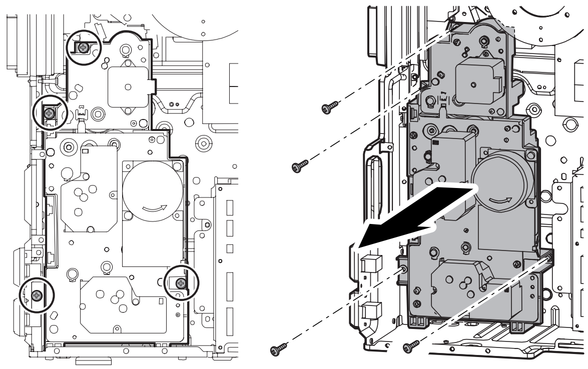
1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the connector, the screws and the grounding terminal, then remove the driver main PWB unit.



4) Remove the connector and the screws. Release the pawl, then remove the filter box unit.

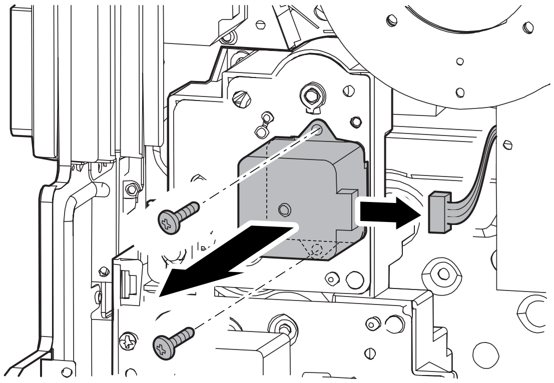


5) Remove the connector and remove the paper feed drive unit.



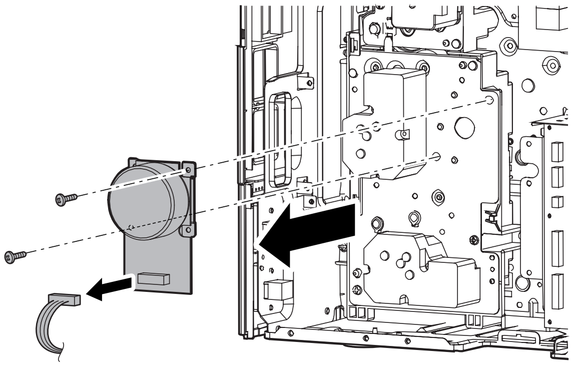
a. Transport motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the connector and the screws, then remove the transport motor.



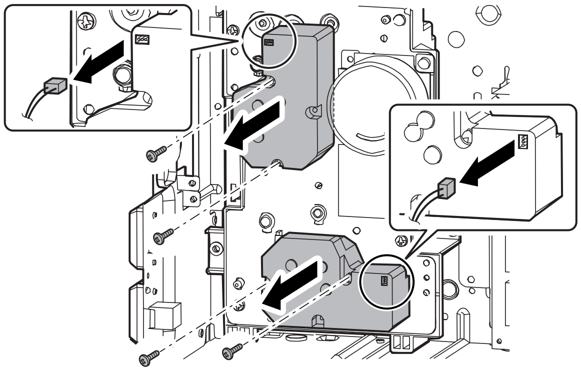
b. Paper feed motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the driver main PWB unit.
4) Remove the filter box unit.
5) Remove the connector and the screws, then remove the paper feed motor.

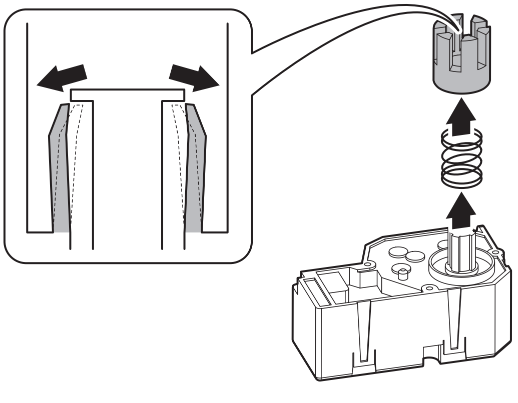


c. Paper tray lift-up motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the driver main PWB unit.
4) Remove the filter box unit.
5) Remove the connector and the screws, then remove the paper tray lift-up motor unit.

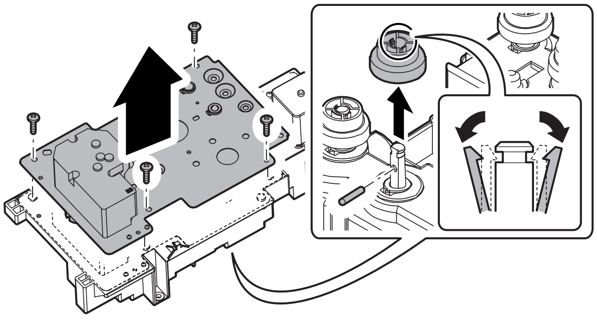


6) Disengage the pawl, and remove the lift-up coupling.

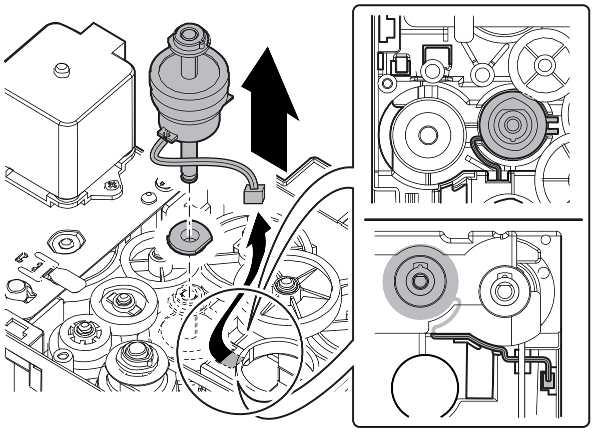


d. Paper feed clutch (Paper feed tray 1)

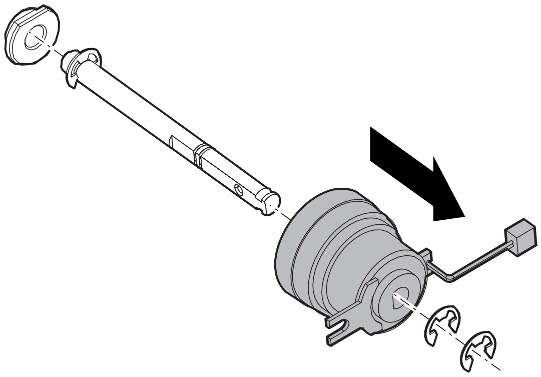
1) Remove the paper tray lift-up motor unit.
2) Remove the paper feed motor.
3) Remove the paper feed drive unit.
4) Remove the connection gear 21T. Remove the screws to detach the drive frame upper unit.



5) Disconnect the connector, and remove the paper feed clutch unit.

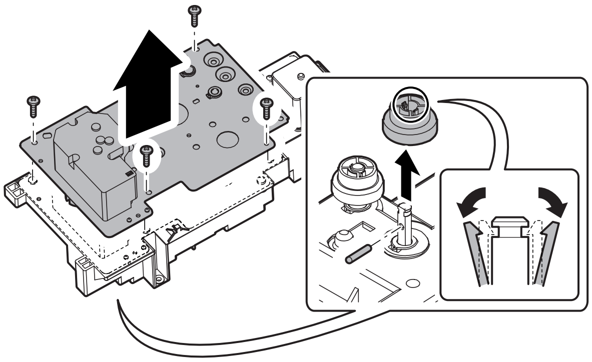


6) Remove the E-ring, and remove the paper feed clutch.

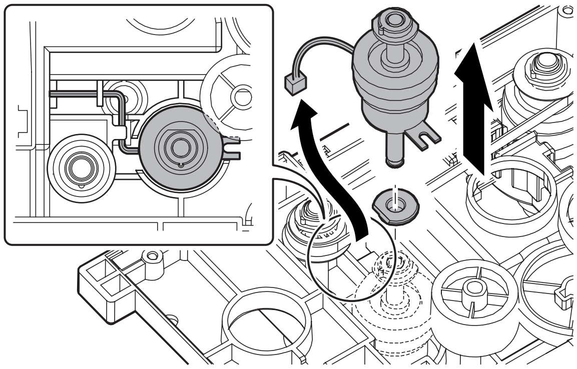


e. Paper feed clutch (Paper feed tray 2)

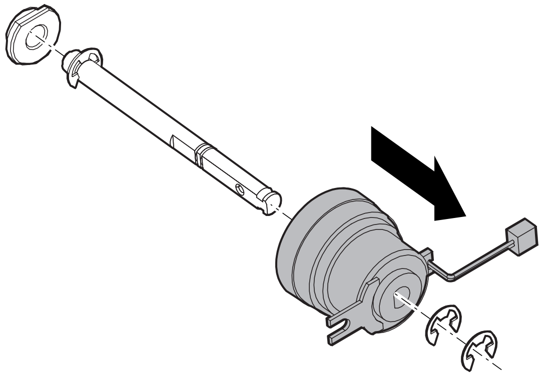
1) Remove the paper tray lift-up motor unit.
2) Remove the paper feed motor.
3) Remove the paper feed drive unit.
4) Remove the connection gear 21T. Remove the screws to detach the drive frame upper unit.



5) Disconnect the connector, and remove the paper feed clutch unit.

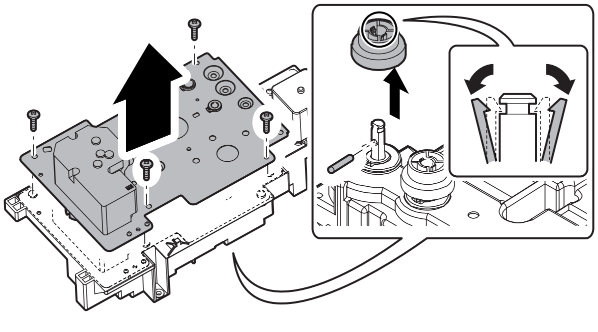


6) Remove the E-ring, and remove the paper feed clutch.

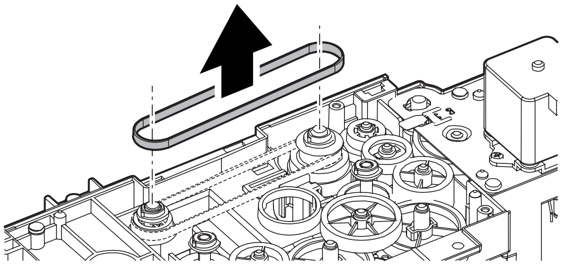


f. Tray vertical transport clutch

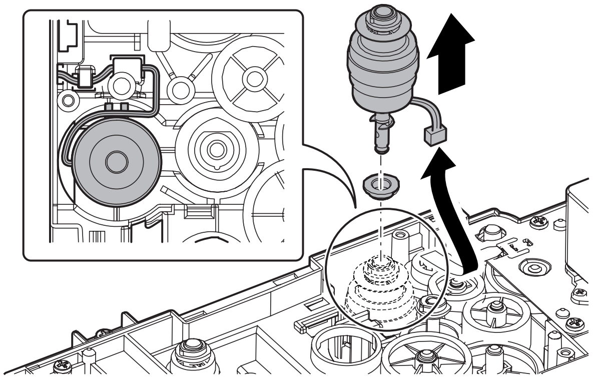
1) Remove the paper tray lift-up motor unit.
2) Remove the paper feed motor.
3) Remove the paper feed drive unit.
4) Remove the connection gear 21T. Remove the screws to detach the drive frame upper unit.



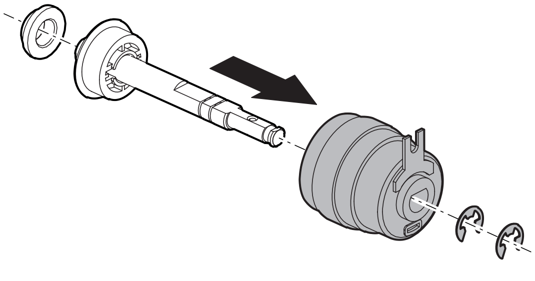
5) Remove the belt.



6) Remove the connector, then remove the tray vertical transfer clutch unit.



7) Remove the E-ring, then remove the tray vertical transfer clutch.

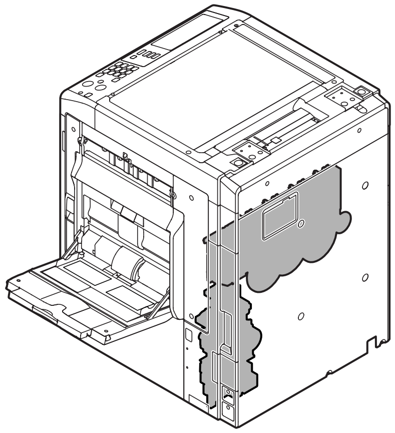


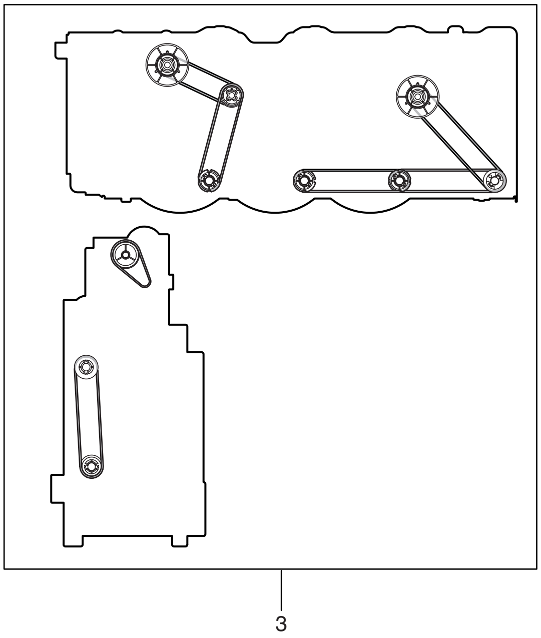
2. Maintenance

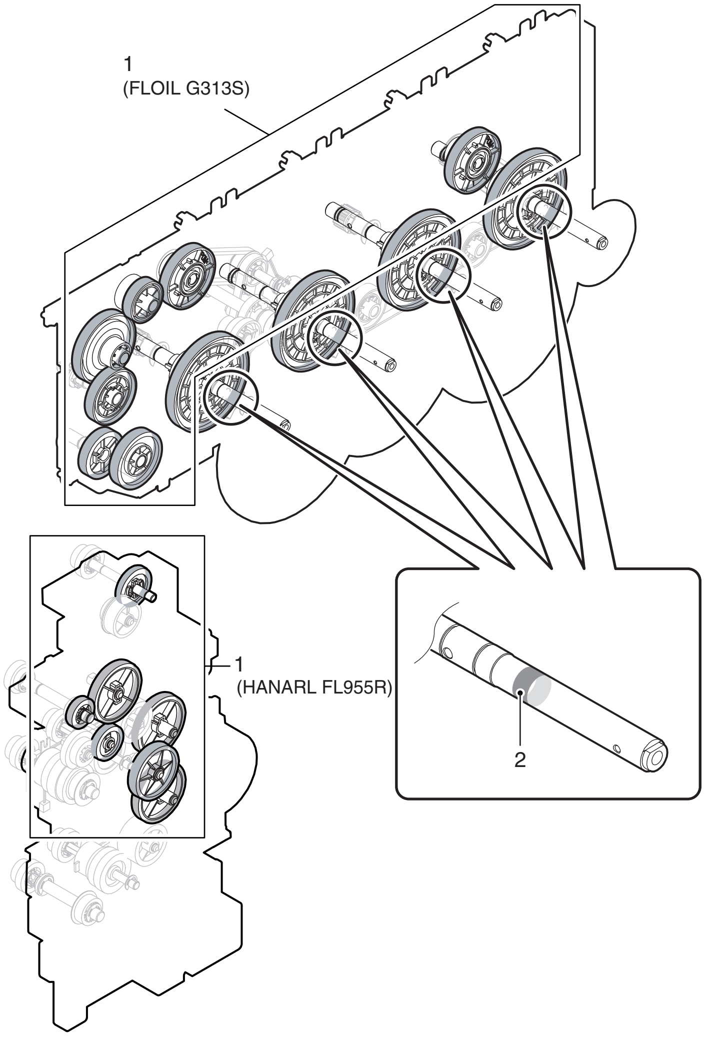
A. Drive Section

✕: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/ Item No. (Only the replacement parts are described.)
1	Gears (Gease)	Mechanism parts	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	When checking HANARL FL955R/ FLOIL G313S, apply to the necessary positions. (Specified positions)
2	Shaft Grounding Section (Conduction Grease)		✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	When checking, apply to the necessary positions. (Specified positions)
3	Belts		✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	



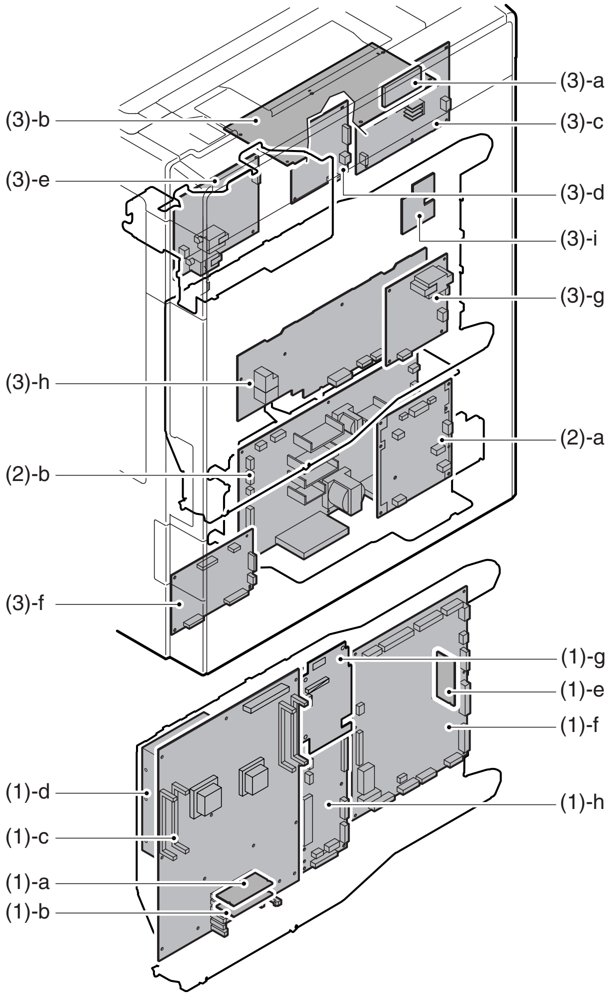




[Q] PWB SECTION

1. Disassembly and assembly

A. PWB



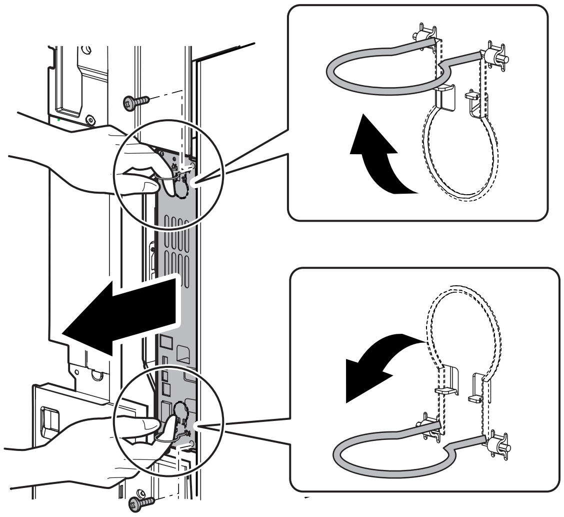
Unit		Parts	
(1)	Control Box	a	BOOT ROM PWB
		b	PROGRAM ROM PWB
		c	MFP cht PWB
		d	HDD
		e	PCU Flash ROM PWB
		f	PCU PWB
		g	SCAN IN PWB
		h	Mother PWB
(2)	Power supply unit	a	AC Power PWB
		b	DC Power PWB
(3)	Others	a	SCN Flash ROM PWB
		b	Scanner Control PWB
		c	HL PWB
		d	Driver Sub PWB
		e	Secondary transfer PWB
		f	Driver Main PWB
		g	Primary transfer PWB
		h	High Voltage MC PWB
		i	HVR PWB

(1) Control Box

a. BOOT ROM PWB

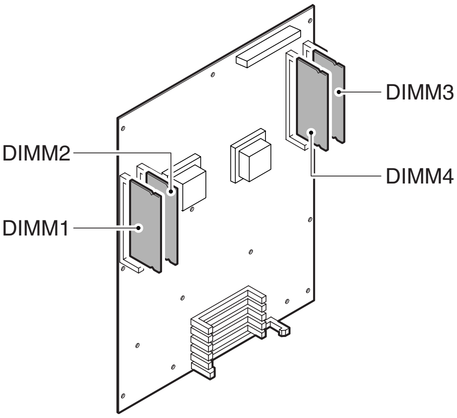
b. PROGRAM ROM PWB

1) Remove the right rear cabinet.
2) Remove the screws and pull out the MFP cnt PWB unit.



* When placing the unit with the HDD upside, remove the DIMM memory or insert a spacer in order to protect the DIMM memory from pressure.

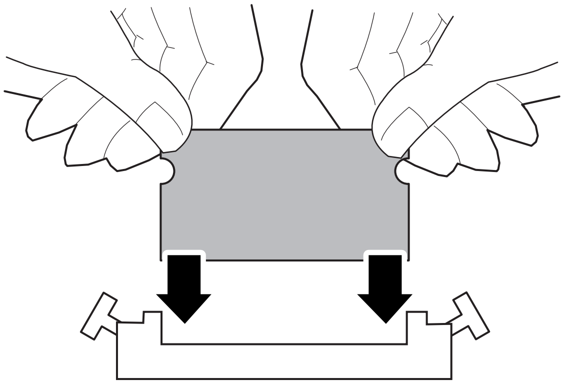
* Insertion position and insertion procedure when removing the DIMM memory.



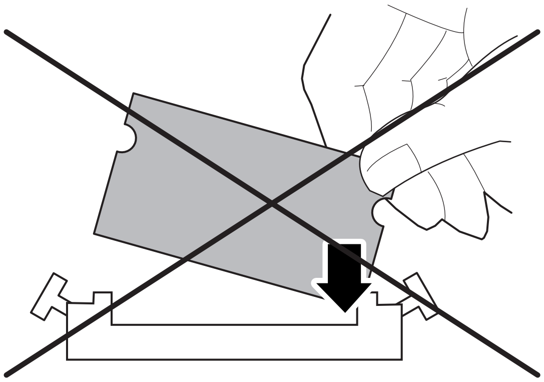
	MX-2300/2700 G	MX-2300/2700 N
DIMM1	Option (256MB)	—
DIMM2	256MB	512MB
DIMM3	512MB	512MB
DIMM4	256MB	256MB

<1> Press the section (⇨) of the memory PWB with both hands.

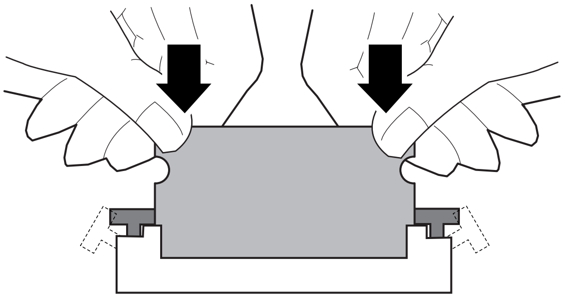
- * When handling the memory PWB, do not touch the pins.
- * Insert temporally and straightly until it is in contact with the contact.



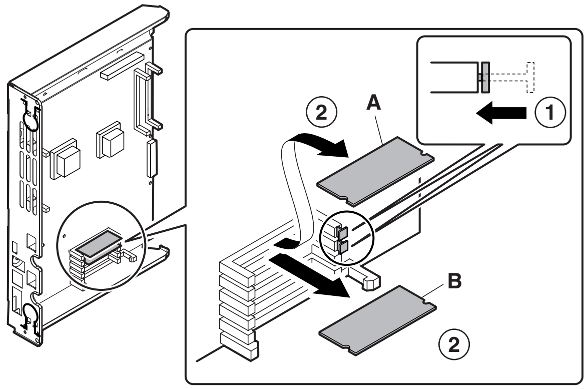
* When inserting, be careful not to insert the memory PWB obliquely to the connector. Do not press the memory PWB pins with one hand.



<2> Press the section (⇨) of the memory PWB with both hands simultaneously until the right and the left buttons are locked.

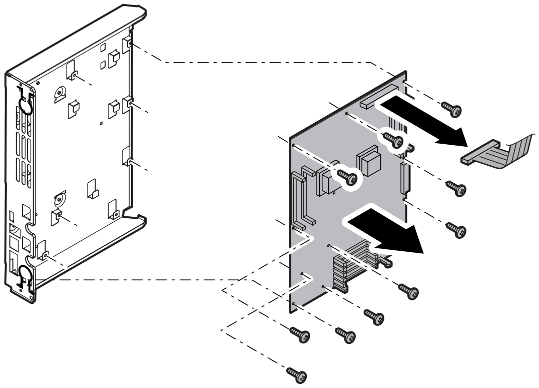


3) Release the lock, and remove the BOOT ROM PWB (A) and the PROGRAM ROM PWB (B).



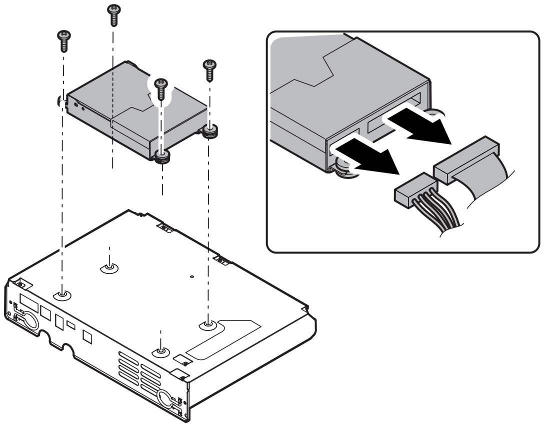
c. MFP cnt PWB

1) Remove the right rear cabinet.
2) Remove the BOOT ROM PWB and the PROGRAM ROM PWB.
3) Remove the screws and then remove the MFP cnt PWB.



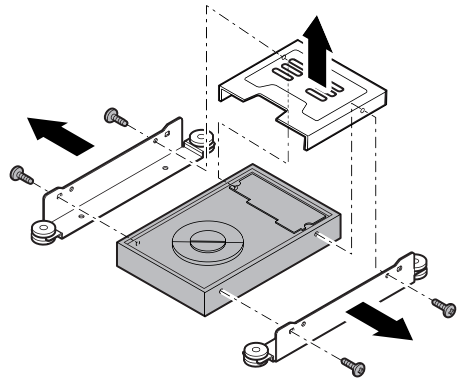
d. HDD

1) Remove the right rear cabinet.
2) Remove the screws and pull out the MFP cnt PWB unit.
3) Remove the connector and screws then remove the HDD unit.



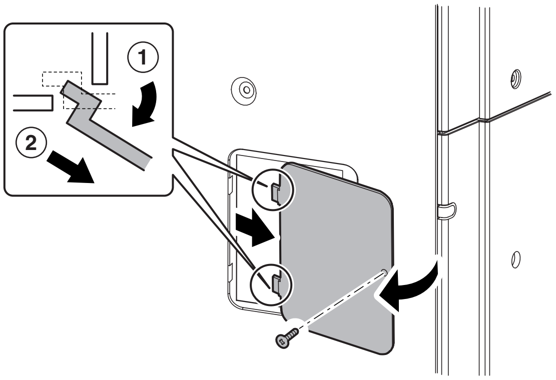
4) Remove the screws, and remove the angle from HDD.

   * Since the HDD is weak in shock, avoid hitting the corner, dropping, or other shocks.

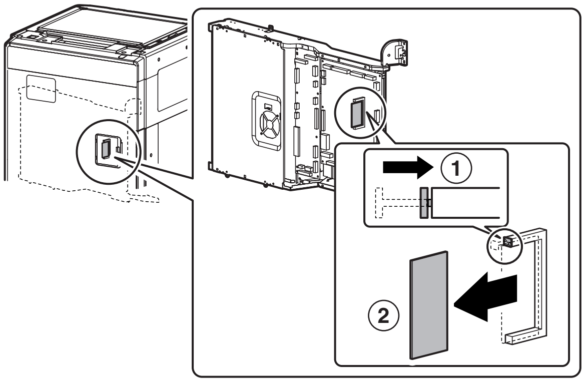


e. PCU Flash ROM PWB

1) Remove the screws, and remove the rear cabinet cover.

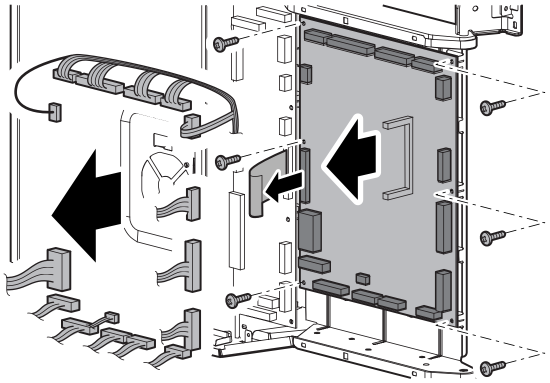


2) Remove the PCU Flash ROM PWB.



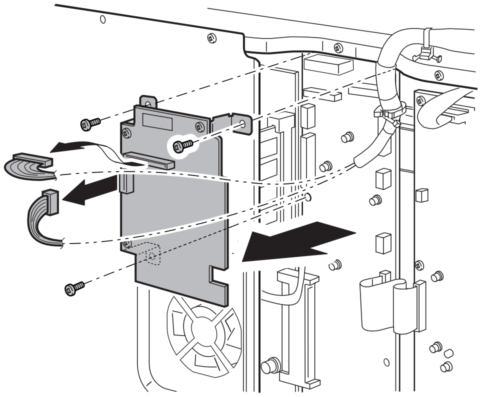
f. PCU PWB

1) Remove the rear cabinet.
2) Remove the PCU Flash ROM PWB.
3) Remove the connector and the screws, then remove the PCU PWB.



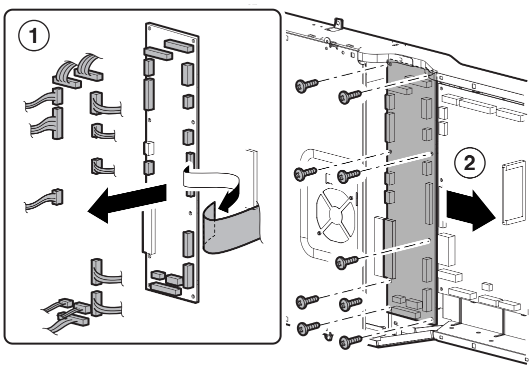
g. SCAN IN PWB

1) Remove the rear cabinet.
2) Remove the connector and the screws, then remove the SCAN IN PWB.



h. Mother PWB

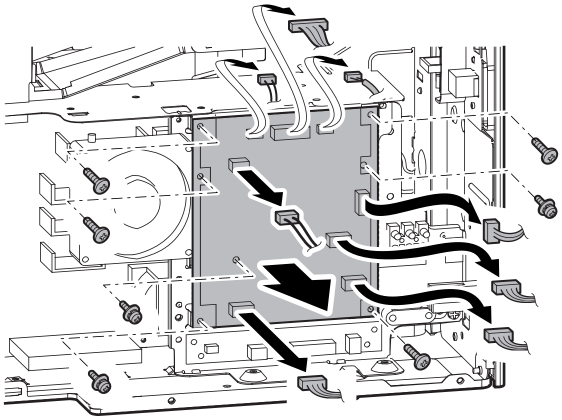
1) Remove the rear cabinet.
2) Remove the SCAN IN PWB.
3) Remove the connector and the screws, then remove the mother PWB.



(2) Power supply unit

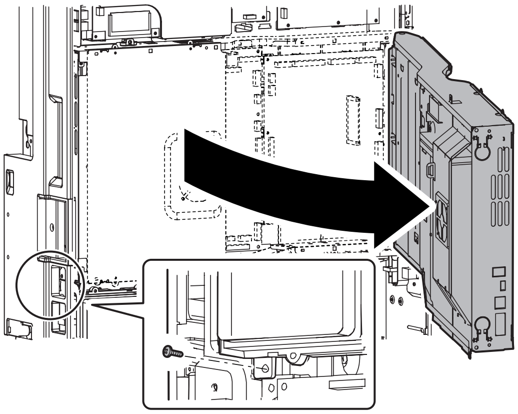
a. AC Power PWB

1) Remove the rear cabinet.
2) Remove the screws and the connector, and remove the AC power PWB.

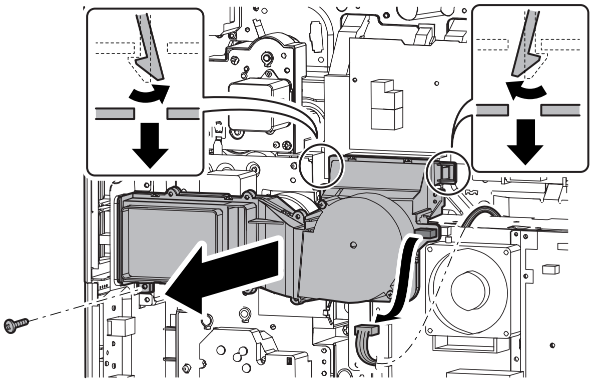


b. DC Power PWB

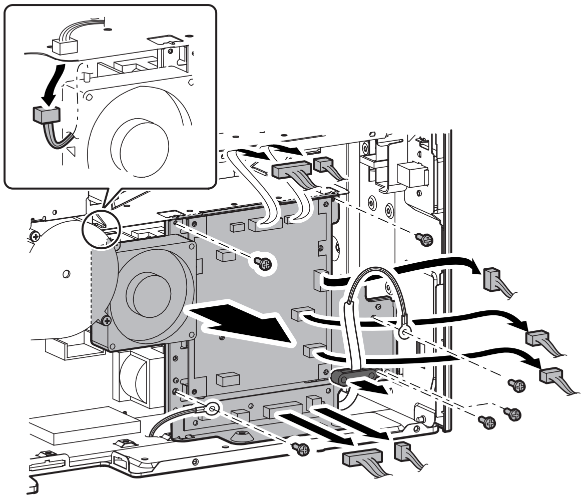
1) Remove the rear cabinet.
2) Open the control box.



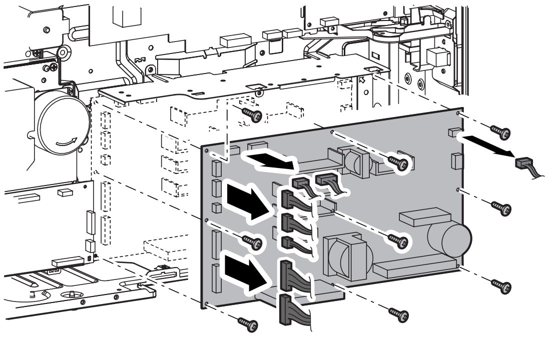
3) Remove the screws and the connector, and remove the filter box unit.



4) Remove the screws and the connector, then remove the AC power PWB unit.



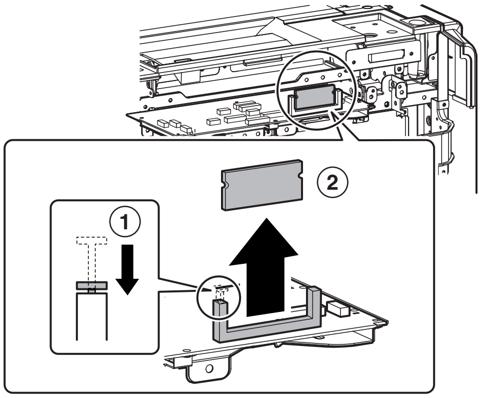
5) Remove the screws and the connector, then remove the DC power PWB.



(3) Others

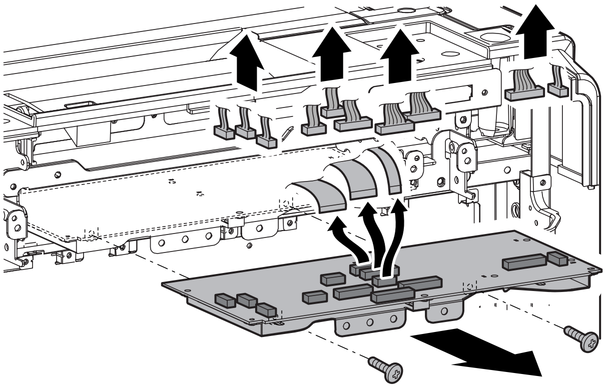
a. SCN Flash ROM PWB

1) Remove the upper cabinet rear cover.
2) Release the lock, and remove the SCN Flash ROM PWB.

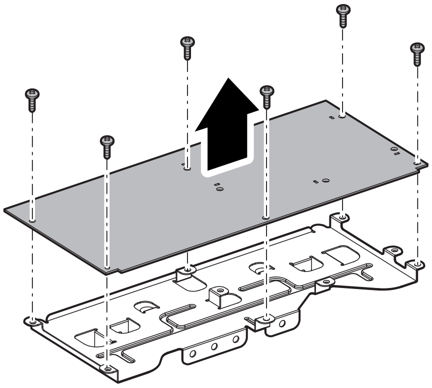


b. Scanner Control PWB

1) Remove the upper cabinet rear cover.
2) Remove the screws, and pull out the scanner control PWB unit. Then remove the connector.

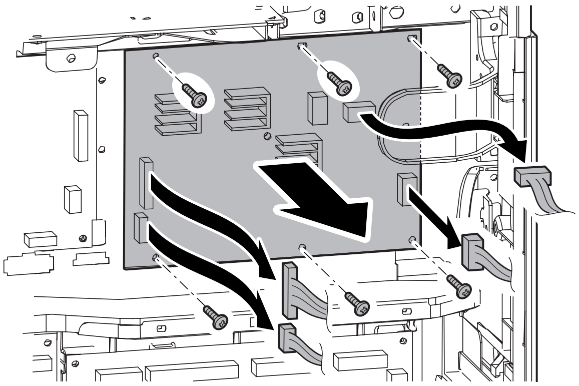


3) Remove the screws, and remove the scanner control PWB.



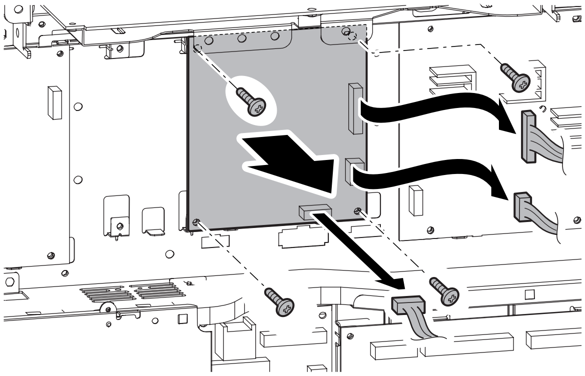
c. HL PWB

1) Remove the upper cabinet rear cover.
2) Remove the screws and the connector, and remove the HL PWB.



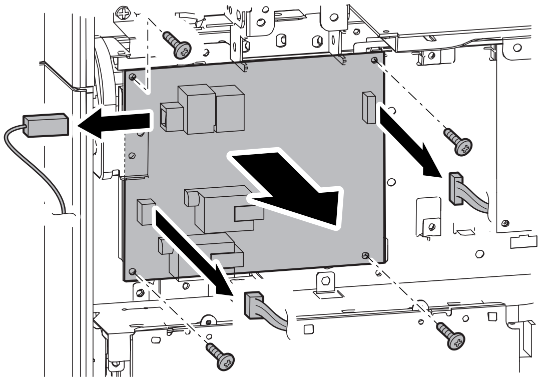
d. Driver Sub PWB

1) Remove the upper cabinet rear cover.
2) Remove the screws, and remove the driver sub PWB.



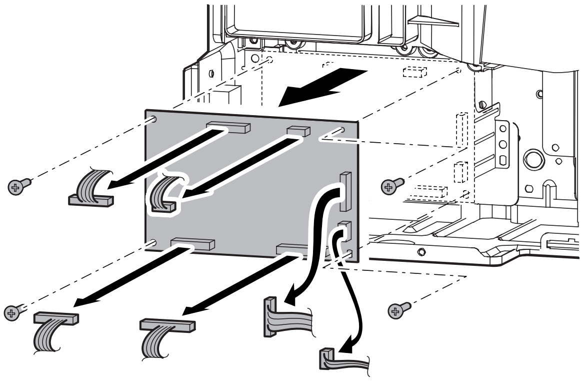
e. Secondary transfer PWB

1) Remove the upper cabinet rear cover.
2) Remove the screws and the connector, and remove the secondary transfer PWB.



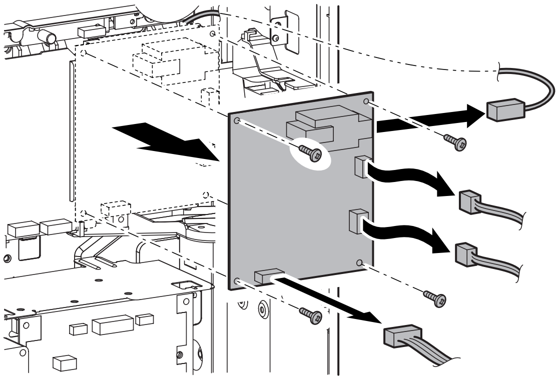
f. Driver Main PWB

1) Remove the rear cabinet.
2) Remove the screws and the connector, and remove the driver main PWB.



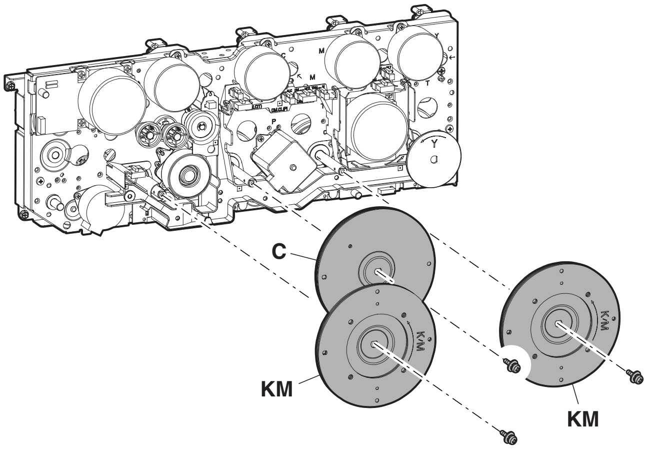
g. Primary transfer PWB

1) Remove the rear cabinet.
2) Open the control box.
3) Remove the screws and the connector, and remove the primary transfer PWB.

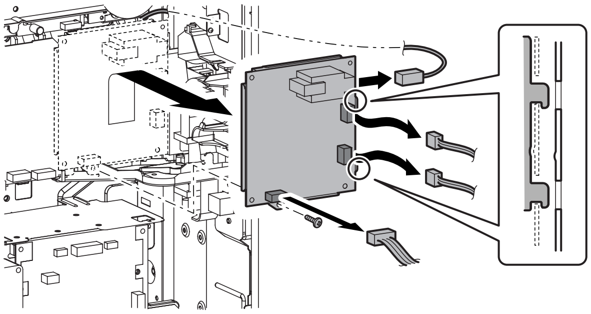


h. MC PWB

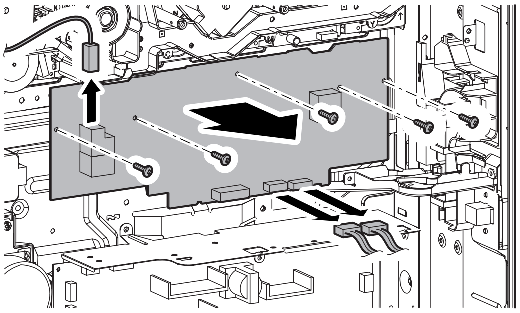
1) Remove the rear cabinet.
2) Open the control box.
3) Remove the screws, then remove the fly wheel.
   - * Installing sequence: (1) C → (2) KM → (3) KM (Each color is marked.)
   - * After installation, check to confirm that it is not in contact with the harness, etc.



4) Remove the screws and the connector, then remove the primary transfer PWB unit.

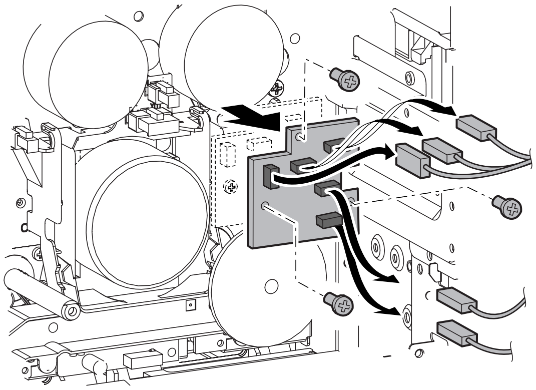


5) Remove the screws and the connector, then remove the MC PWB.



i. HVR PWB

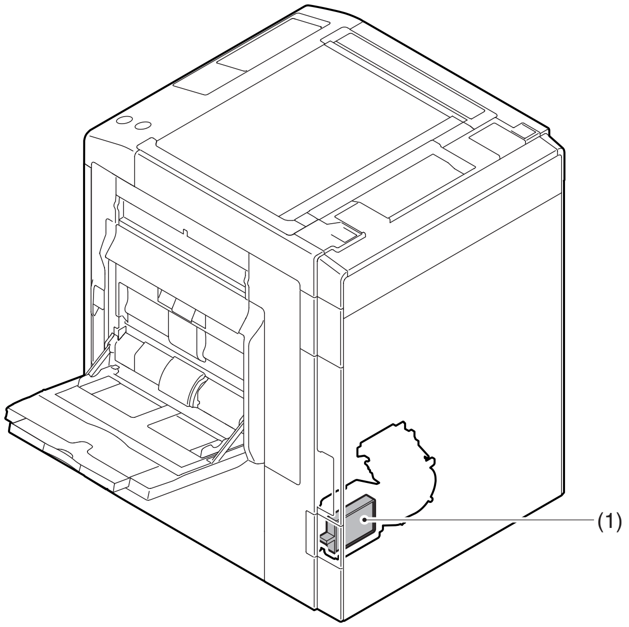
1) Remove the rear cabinet.
2) Open the control box.
3) Remove the connector and the screws, and remove the HVR PWB.



[R] FAN AND FILTER SECTION

1. Disassembly and assembly

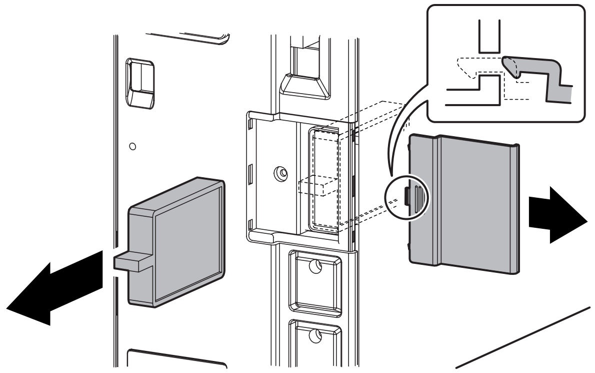
A. Filters



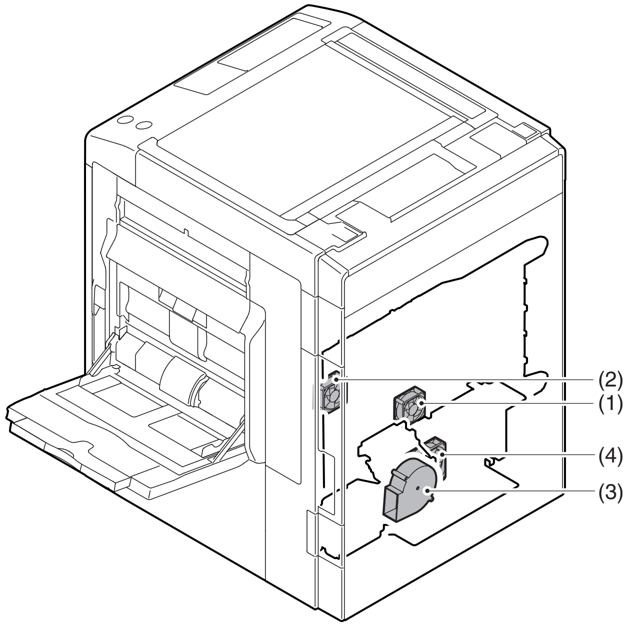
	Parts	Maintenance
(1)	Ozone Filter	× ▲

(1) Ozone Filter

1) Remove the ozone filter cover, then remove the ozone filter.



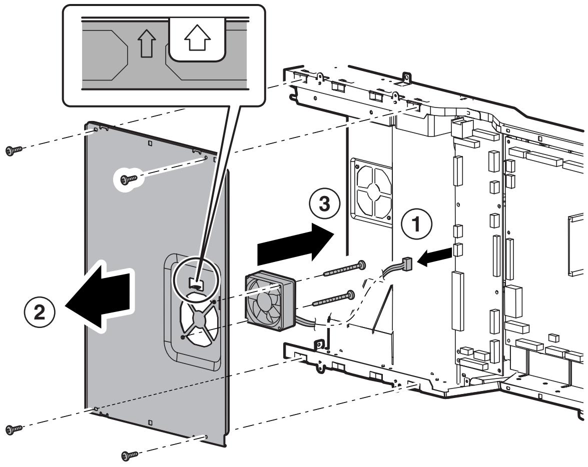
B. Fans



	Parts	Maintenance
(1)	Controler cooling fan motor	
(2)	HDD cooling fan motor	
(3)	Ozone fan motor	
(4)	Power supply cooling fan motor	

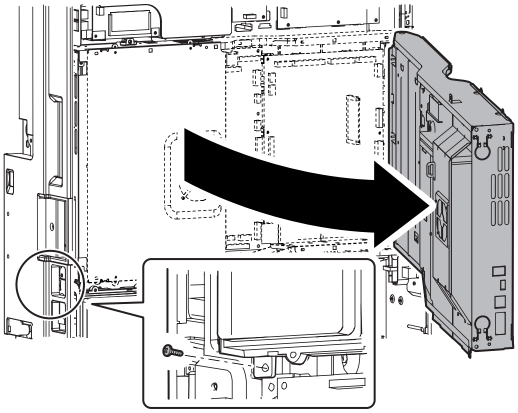
(1) CPU cooling fan motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Remove the connector. Remove the screws, and remove the MFP PWB shield upper. Remove the screws, and remove the CPU cooling fan motor.
   * When installing, fit the arrow mark on the MFP PWB shield and the arrow mark of the CPU cooling fan motor.

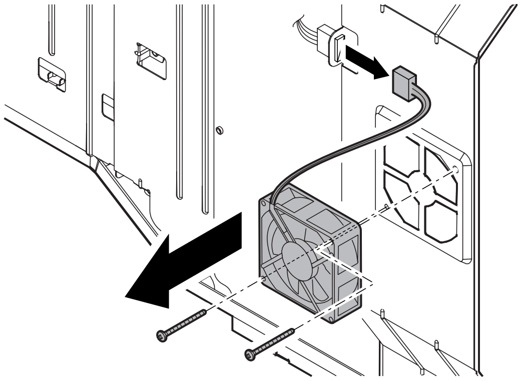


(2) HDD cooling fan motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.

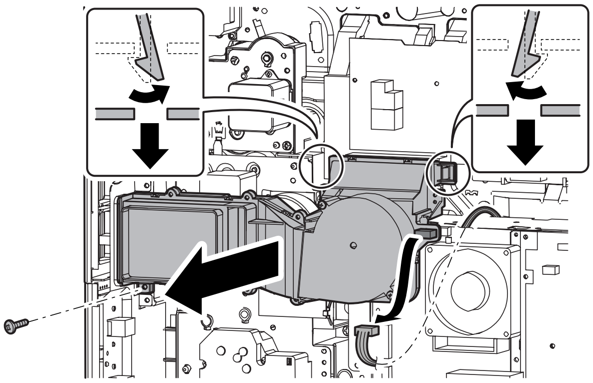


3) Remove the connector and the screws, then remove the HDD cooling fan motor.

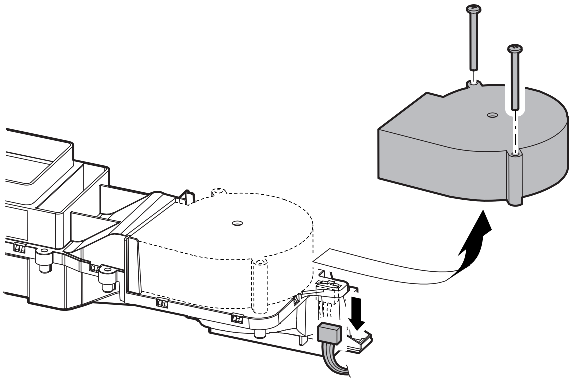


(3) Ozone fan motor

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the filter box unit.

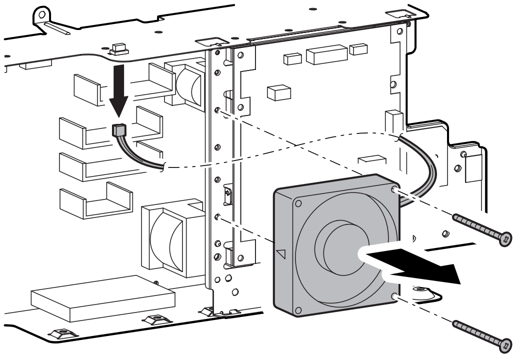


4) Remove the connector and the screws, and remove the ozone fan motor from the filter box unit.



(4) Power supply cooling fan

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Open the control box.
3) Remove the filter box unit.
4) Remove the connector and the screws, and remove the power supply cooling fan.

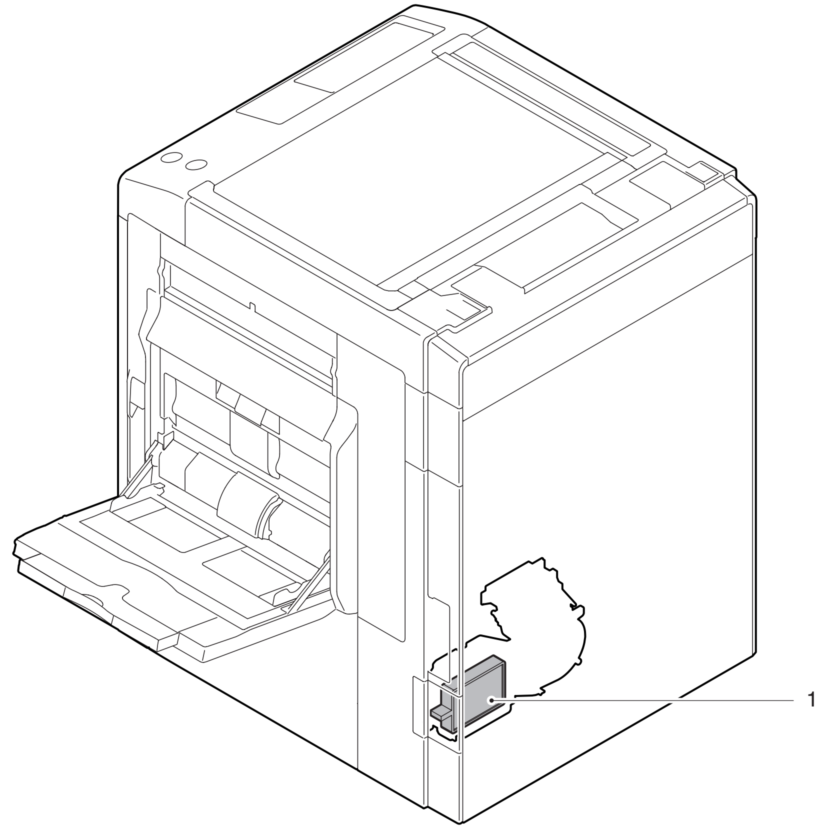


2. Maintenance

A. Filters

✕: Check (Clean, replace, or adjust according to necessity.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate ☐: Shif the position.

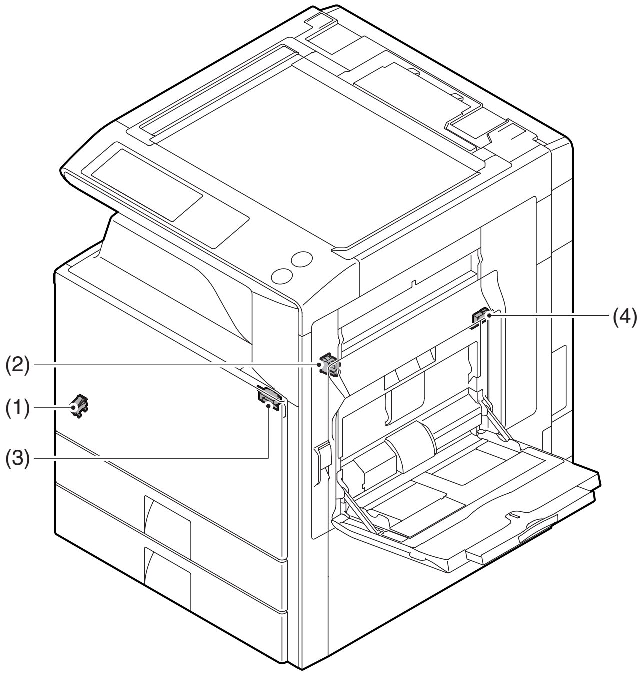
No.	Parts name	Monochrome supply, mechanical parts	When calling	100 K	200 K	300 K	400 K	500 K	600 K	700 K	800 K	900 K	1000 K	1100 K	1200 K	Remark/Refer to the Parts Guide. Block/Item No. (Only the replacement parts are described.)
1	Ozone filter PA		✕	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	(P/G No.: [47]-40)



[S] SENSOR, SWITCH SECTION

1. Disassembly and assembly

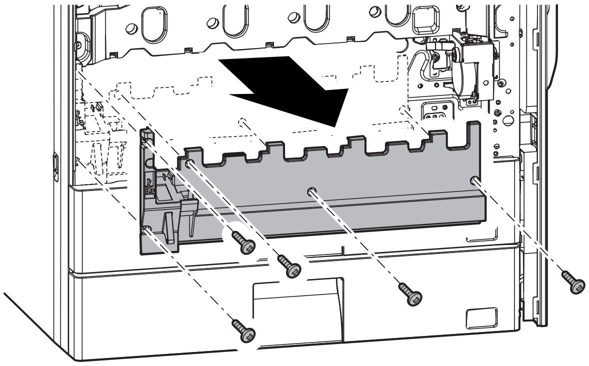
A. Sensors, Switches



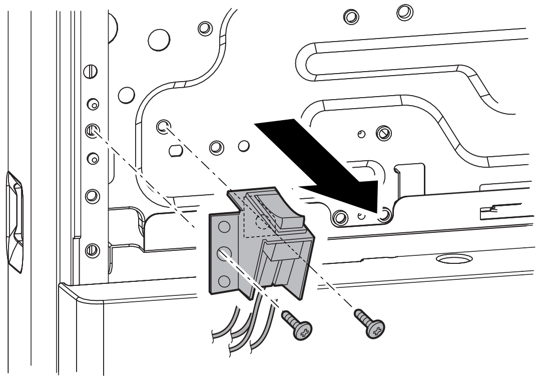
Parts	
(1)	Main Switch
(2)	Dehumidifier Heater Switch
(3)	Front Door Open/Close Switch
(4)	Right Door Open/Close Switch

(1) Main Switch

1) Remove the front cabinet. (Refer to Front Cabinet in External Outfit Section.)
2) Remove the screws, and remove the frame cover.

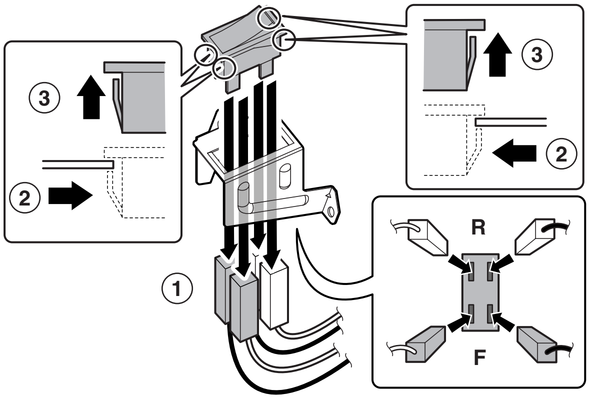


3) Remove the screws, then remove the main switch unit.



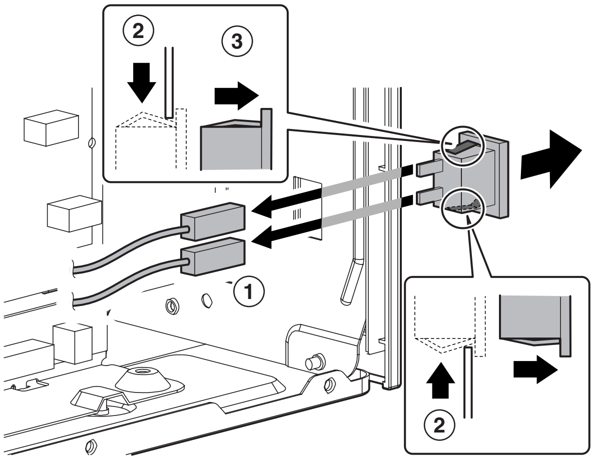
4) Remove the connector and the pawl, then remove the main switch.

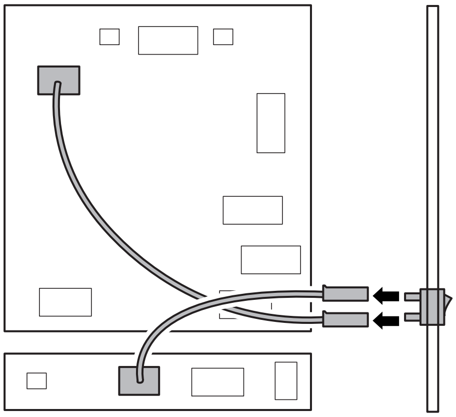
   * Take care of connecting the connectors when installing.



(2) Dehumidifier Heater Switch

1) Remove the rear cabinet. (Refer to Rear Cabinet in External Outfit Section.)
2) Disconnect the connector. Release the pawl, and remove the dehumidifier heater switch.

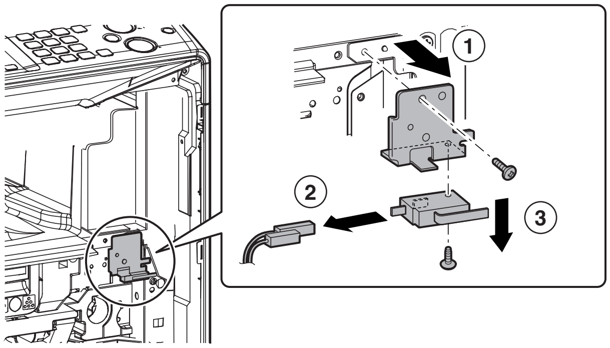




(3) Front Door Open/Close Switch

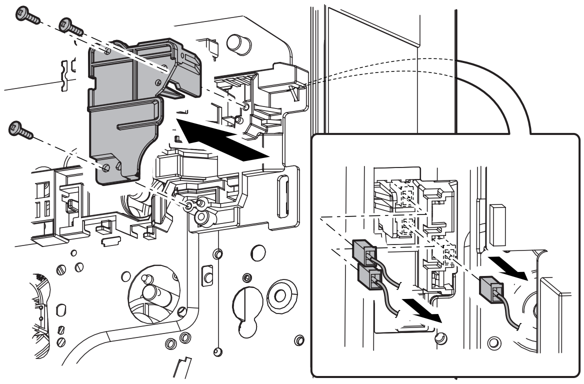
1) Remove the frame cover. (Refer to Frame Cover in External Outfit Section.)
2) Remove the screws and then remove the front door open/close switch unit.

   Remove the connector and the screws and then remove the front door open/close switch.

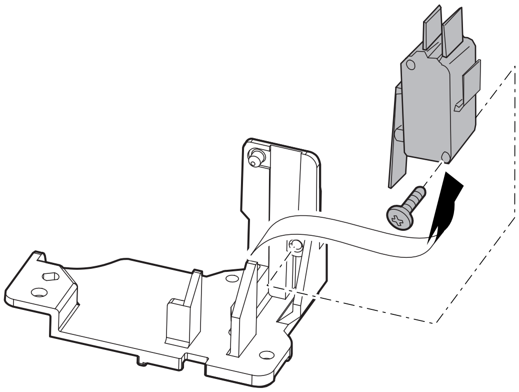


(4) Right Door Open/Close Switch

1) Remove the rear cabinet.
2) Open the control box.
3) Open the right door unit.
4) Remove the resist roller unit.
5) Remove the connector and the screws, then remove the right door open/close switch cover unit.



6) Remove the right door open/close switch.



Memo

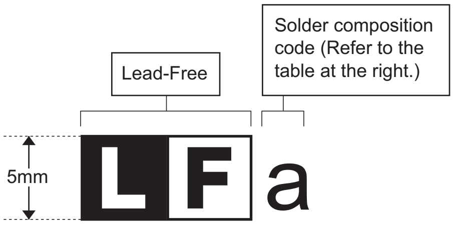
Memo

Memo

LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder. The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

Solder composition	Solder composition code
Sn-Ag-Cu	a
Sn-Ag-Bi Sn-Ag-Bi-Cu	b
Sn-Zn-Bi	z
Sn-In-Ag-Bi	i
Sn-Cu-Ni	n
Sn-Ag-Sb	s
Bi-Sn-Ag-P Bi-Sn-Ag	p

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommendable.

(2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according to manufacturer's instructions.

(Finnish) VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION

Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type équivalent recommandé par
le constructeur.
Mettre au rebut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung

Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"

THIS PRODUCT CONTAINS A LITHIUM PRIMARY (MANGANESS DIOXIDE) MEMORY BACK-UP BATTERY THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE BATTERY FROM THE PRODUCT AND CONTACT YOUR LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"

CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE) QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE AGENCE ENVIRONNEMENTALE LOCALE POUR DES INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET DE TRAITEMENT.

SHARP

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